ORDER NO. KM49507977C1
F1

# Service Manual

## and Technical Guide

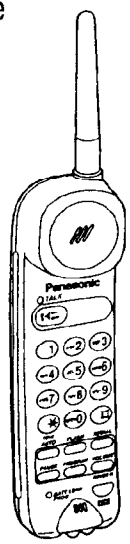
SOUND CHARGER PLUS

Telephone Equipment

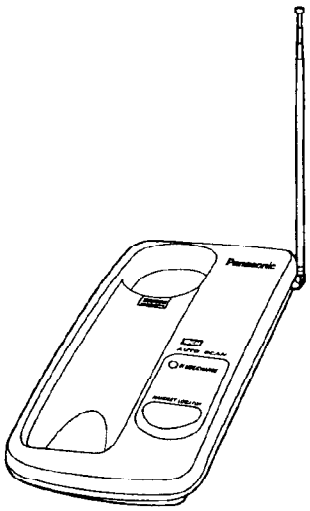
Cordless Phone

# KX-T3908-B

(for U.S.A.)



(KX-T3908R-B)



(KX-T3908H-B)


SPECIFICATIONS\ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ
DISASSEMBLY INSTRUCTIONS\ПОРЯДОК РАЗБОРКИ
CPU DATA (KX-T3908H-B)\ИНФОРМАЦИЯ О ПРОЦЕССОРЕ (KX-T3908H-B)
CPU DATA (KX-T3908R-B)\ИНФОРМАЦИЯ О ПРОЦЕССОРЕ (KX-T3908R-B)
EXPLANATION OF IC TERMINALS\ФУНКЦИОНАЛЬНОЕ НАЗНАЧЕНИЕ ВЫВОДОВ МИКРОСХЕМ
ADJUSTMENTS (KX-T3908H-B)\РЕГУЛИРОВКИ (KX-T3908H-B)
SCHEMATIC DIAGRAM (KX-T3908H-B)\ПРИНЦИПИАЛЬНАЯ СХЕМА (KX-T3908H-B)
SCHEMATIC DIAGRAM (KX-T3908R-B)\ПРИНЦИПИАЛЬНАЯ СХЕМА (KX-T3908R-B)
ADJUSTMENTS (KX-T3908R-B)\РЕГУЛИРОВКИ (KX-T3908R-B)
FREQUENCY TABLE\ТАБЛИЦА РАБОЧИХ ЧАСТОТ
ACCESSORIES AND PACKING MATERIALS\ПРИНАДЛЕЖНОСТИ И УПАКОВОЧНЫЕ МАТЕРИАЛЫ
RF SPECIFICATIONS\ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ ВЫСОКОЧАСТОТНОГО БЛОКА
HOW TO CHECK THE PORTABLE HANDSET SPEAKER\ПРОВЕРКА ДИНАМИКА ТРУБКИ
BLOCK DIAGRAM (KX-T3908H-B)\БЛОК-СХЕМА (KX-T3908H-B)
BLOCK DIAGRAM (KX-T3908R-B)\БЛОК-СХЕМА (KX-T3908R-B)
CABINET AND ELECTRICAL PARTS LOCATION (KX-T3908H-B)\РАСПОЛОЖЕНИЕ ЧАСТЕЙ КОРПУСА И ЭЛЕКТРИЧЕСКИХ ЧАСТЕЙ (KX-T3908H-B)
CABINET AND ELECTRICAL PARTS LOCATION (KX-T3908R-B)\РАСПОЛОЖЕНИЕ ЧАСТЕЙ КОРПУСА И ЭЛЕКТРИЧЕСКИХ ЧАСТЕЙ (KX-T3908R-B)
REPLACEMENT PARTS LIST (KX-T3908H-B)\СПИСОК ЗАПАСНЫХ ЧАСТЕЙ (KX-T3908H-B)
REPLACEMENT PARTS LIST (KX-T3908R-B)\СПИСОК ЗАПАСНЫХ ЧАСТЕЙ (KX-T3908R-B)


Panasonic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## ■ SPECIFICATIONS

**General**

| | | | |
|---|---|---|---|
| Modulation: | FM, 5 kHz Deviation | Pause: | 3.5 seconds per pause |
| Frequency Stability: | ±2.5 kHz | Memory Capacity: | 10 telephone numbers, up to 16 digits per station |
| Dial Type: | Tone (DTMF)/Pulse | | |
| Redial: | Last dialed number each time the Redial button is pressed | | |

| | Base Unit (KX-T3908H-B) | Portable Handset (KX-T3908R-B) |
|---|---|---|
| Power Source: | AC adaptor KX-A10 (DC 12 V) | Built-in rechargeable Ni-Cd battery (PQXA36ASVC) |
| (Receiver Section) | | |
| Receiving Frequency: | 10 channels within 49.6 to 49.9 MHz | 10 channels within 46.6 to 46.9 MHz |
| Adjacent Channel Rejection: | 40 dB | 40 dB |
| Sensitivity: | 1dBμV for 20 dB S/N | 2 dBμV for 20 dB S/N |
| (Transmitter Section) | | |
| Transmitting Frequency: | 10 channels within 46.6 to 46.9 MHz | 10 channels within 49.6 to 49.9 MHz |
| Jacks: | DC IN, Telephone line | |
| Antenna: | Telescopic | Rubber Flexible |
| Speaker: | 2" (5 cm) PM dynamic | $1^{3}/_{16}$" (3 cm) dynamic |
| Microphone: | Condenser microphone | Condenser microphone |
| Dimensions (H×W×D): | 2"×4 $^{3}/_{4}$"×$8^{25}/_{32}$" (51×121×223 mm) | $11^{1}/_{16}$"×2"×$1^{15}/_{16}$" (281×51×49 mm) |
| Weight: | 0.66 lbs. (300 g) | 0.46 lbs. (210g) with battery |

Design and specifications are subject to change without notice.

# DISASSEMBLY INSTRUCTIONS

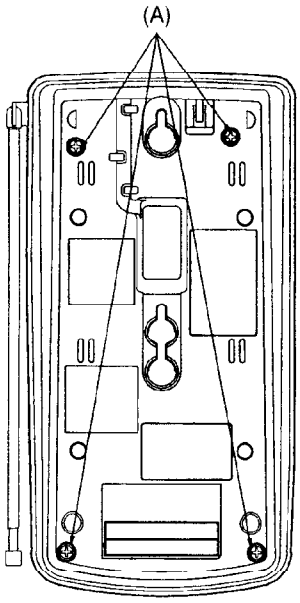



Fig. 4

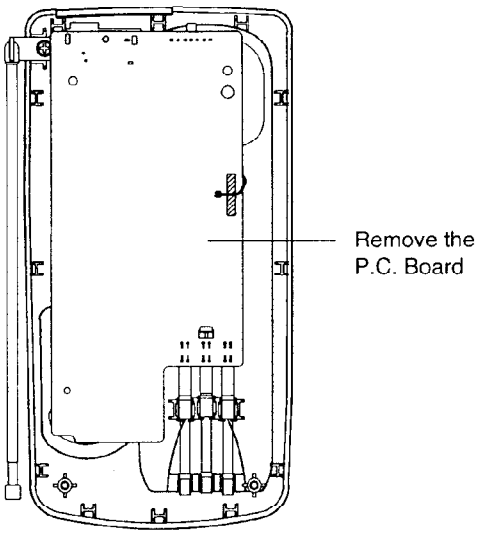



Fig. 5

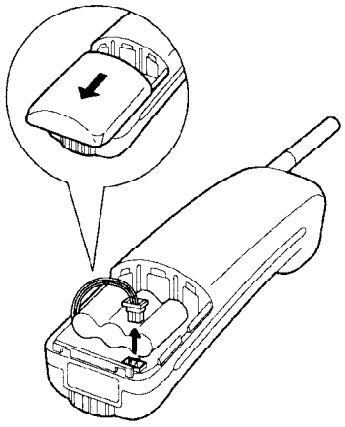


Fig. 6

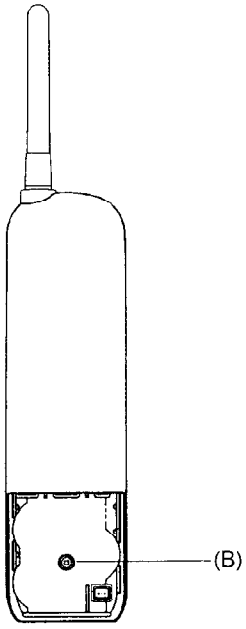



Fig. 7

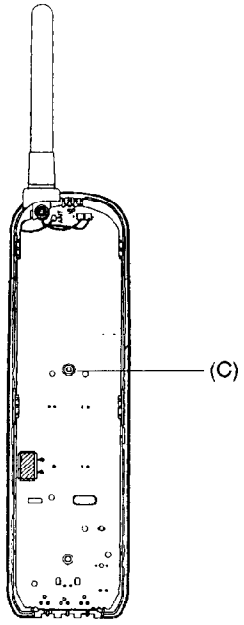



Fig. 8

| Ref. No. | Procedure | Shown in Fig.— | To remove—. | Remove—. |
|---|---|---|---|---|
| 1 | 1 | 4 | Lower Cabinet | Screws (3×14) ..... (A)×4 |
| 2 | 1, 2 | 5 | Printed Circuit Board | Remove the P.C. Board |
| 3 | 3, 4 | 6 | Rear Cabinet | Remove the battery compartment cover |
| 4 | | 7 | | Screw (2.6×12) ..... (B)×1 |
| 5 | 3~5 | 8 | Printed Circuit Board | Screw (2.6×10) ..... (C)×1 |

# CPU DATA (KX-T3908H-B)

**IC1 MN150409KRF**

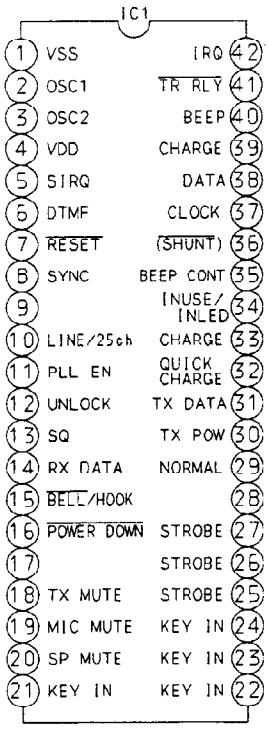



Fig. 9

| Pin No. | Description | I/O | High | High-Z | Low | Pin No. | Description | I/O | High | High-Z | Low |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GND | | | | GND | 25 | Option Strobe | O | | Normal | Active |
| 2 | CPU Clock | I | | | | 26 | Option Strobe | O | | Normal | Active |
| 3 | (3.581MHz) | O | | | | 27 | Option Strobe | O | | Normal | Active |
| 4 | VDD | | | | | 28 | Not Used | | | | |
| 5 | Ext. Interrupt Input | I | Normal | | | 29 | Charge Current | O | Trickle | | Normal |
| 6 | DTMF | O | Normal | | (Active) | 30 | TX POWER | O | ON | | OFF |
| 7 | Reset | I | Normal | | Reset | 31 | TX DATA | O | 1 | | 0 |
| 8 | Not Used | | | | | 32 | Not Used | | | | |
| 9 | TONE/PULSE SW | I | TONE | | PULSE | 33 | Not Used | | | | |
| 10 | Not Used | | | | | 34 | IN USE LED | O | | OFF | ON |
| 11 | PLL EN | O | Active | | Normal | 35 | Not Used | | | | |
| 12 | PLL Unlock | I | Unlock | | Lock | 36 | Not Used | | | | |
| 13 | SQUELCH | I | Electric Feild High | | Electric Feild Low | 37 | Serial Clock | O | Normal | | (Active) |
| 14 | RX DATA | I | 1 | | 0 | 38 | Serial Data | O | (Active) | | (Active) |
| 15 | Bell/(Hook) | I | Off Hook | | Bell in | 39 | Charge | I | Charge | | Non |
| 16 | Power Down | I | Normal | | Down | 40 | Not Used | | | | |
| 17 | Not Used | | | | | 41 | TR-RLY | O | | OFF | ON |
| 18 | Not Used | | | | | 42 | Ext. Interrupt Input | I | Normal | | |
| 19 | Not Used | | | | | | | | | | |
| 20 | Not Used | | | | | | | | | | |
| 21 | Key in | I/O | Normal | | Key in | | | | | | |
| 22 | Key in | I/O | Normal | | Key in | | | | | | |
| 23 | Key in | I/O | Normal | | Key in | | | | | | |
| 24 | Key in | I/O | Normal | | Key in | | | | | | |

# CPU DATA (KX-T3908R-B)

**IC4 PQVI0006G505**

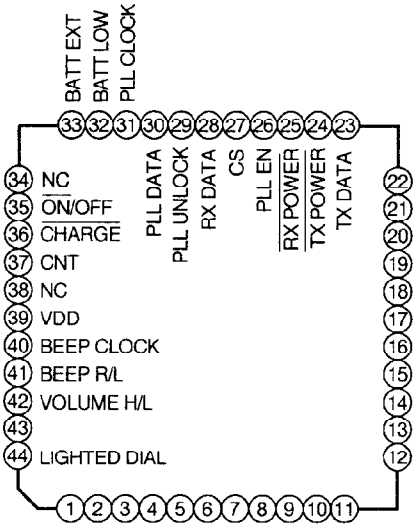



Fig. 10

| Pin No. | Description | I/O | High | High-Z | Low | Pin No. | Description | I/O | High | High-Z | Low |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Option Strobe 1 | O | Normal | | Active | 25 | $\overline{\text{RX Power}}$ | O | Off | | On |
| 2 | Option Strobe 0 | O | Normal | | Active | 26 | PLL En | O | Latch | | Normal |
| 3 | Key Strobe 4 | O | Normal | | Active | 27 | Squelch | I | Electric Field Low | | Electric Field High |
| 4 | Key Strobe 3 | O | | Normal | Active | 28 | RX Data | I | (Data) | | Normal |
| 5 | Key Strobe 2 | O | | Normal | Active | 29 | PLL Unlock | I | Unlock | | Lock |
| 6 | Key Strobe 1 | O | | Normal | Active | 30 | PLL Data | O | (Data) | | Normal |
| 7 | Key Strobe 0 | O | | Normal | Active | 31 | PLL Clock | O | (Clock) | | Normal |
| 8 | Key In 3 | I | Off | | On | 32 | Batt Low | I | High | | Low |
| 9 | Key In 2 | I | Off | | On | 33 | Battery | I | High | | Low |
| 10 | Key In 1 | I | Off | | On | 34 | Not Used | | | | |
| 11 | Key In 0 | I | Off | | On | 35 | $\overline{\text{On}}$/Off | I | Off | | On |
| 12 | Not Used | | | | | 36 | $\overline{\text{Charge}}$ (Battery Terminal) | I | Normal | | Charge |
| 13 | Not Used | | | | | 37 | $\overline{\text{Charge}}$ (Control) | I | Charger | | Base Unit |
| 14 | LED (BATT LOW) | O | | Off | On | 38 | Internally Conn. | | | | |
| 15 | LED (TALK) | O | | Off | On | 39 | VDD | | | | |
| 16 | Not Used | | | | | 40 | Beep Clock | O | Normal | | (Clock) |
| 17 | GND | | | | | 41 | Beep Control | O | Low | | High |
| 18 | Sub Clock | I | | | | 42 | RX Volume Selecter | O | Low | | High |
| 19 | (32.768kHz) | I | | | | 43 | Not Used | | | | |
| 20 | $\overline{\text{Reset}}$ | I | Normal | | Reset | 44 | Not Used | | | | |
| 21 | Main Clock | I | | | | | | | | | |
| 22 | (3.99MHz) | I | | | | | | | | | |
| 23 | TX Data | O | (Data) | | Noraml | | | | | | |
| 24 | $\overline{\text{TX Power}}$ | O | Off | | On | | | | | | |

# EXPLANATION OF IC TERMINALS

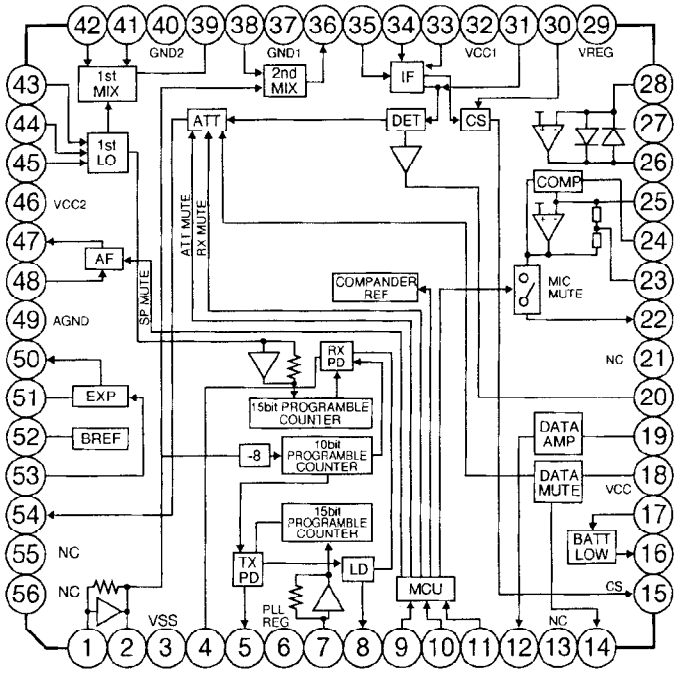



Fig. 11

**Part No. AN6185FA**
**IC2: Base Unit**
**IC1: Portable Handset**

| Pin No. | Description | | Pin No. | Description | |
|---|---|---|---|---|---|
| 1 | 2Lo-IN | Second Oscillator Input | 29 | VREG | Baseband Regulater Output |
| 2 | 2Lo-OUT | Second Oscillator Output | 30 | CS-HiCut | Carrier Sens. High Cut |
| 3 | VSS | GND for PLL | 31 | Quad | Quadrature Coil |
| 4 | RX-PD | RX Phase Comparison Output | 32 | VCC1 | Vcc1 |
| 5 | TX-PD | TX Phase Comparison Output | 33 | IF-PASS | IF Amp. Decuppling |
| 6 | PLL-REG | PLL Regulater Output | 34 | IF-IN | IF Amp. Input |
| 7 | fINT | TX Carrier Input | 35 | IF-PASS | IF Amp. Decuppling |
| 8 | LD | Lock Detector Output | 36 | 2MIX-OUT | Second Mixer Input |
| 9 | DATA | Serial Data Input | 37 | GND1 | GND1 |
| 10 | EN | Enable Input | 38 | 2MIX-IN | Varicap Control |
| 11 | CLK | Clock Input | 39 | 1MIX-OUT | First Mixer Output |
| 12 | DATA-AMP OUT | Data Amp. Output | 40 | GND2 | GND2 |
| 13 | NC | Not Used | 41 | RF-IN | First Mixer Input |
| 14 | DATA-MUTE CONT | Data Mute Time Constant Adjustment | 42 | RF-IN | First Mixer Input |
| 15 | CS-OUT | Carrier Sensitivity Output | 43 | VA-CONT | Varicap Control |
| 16 | Batt-Lo | Battery Low LED Drive | 44 | 1st-Lo | First Oscillator Tank |
| 17 | Batt-CONT | Battery Low Level Control | 45 | 1st-Lo | First Oscillator Tank |
| 18 | DATA-MUTE IN | Data Mute Input | 46 | VCC2 | VCC2 |
| 19 | DATA-AMP IN | Data Amp. Input | 47 | AF-OUT | AF Amp. Output |
| 20 | IF-DET-OUT | IF-DET Output | 48 | AF-AMP IN | AF Amp. Input |
| 21 | NC | Not Used | 49 | AGND | Analog GND |
| 22 | COMP-OUT | COMP Output | 50 | EXP-OUT | Exp. Output |
| 23 | COMP-REF | COMP Output VREF | 51 | EXP-DET | Exp. Detect |
| 24 | C-DET | COMP Detect | 52 | BREF | Baseband VREF |
| 25 | COMP-IN | COMP Input | 53 | EXP-IN | Exp. Input |
| 26 | MIC-OUT | MIC Amp. Output | 54 | ATT-OUT | Attenuator Output |
| 27 | NC | Not Used | 55 | NC | Not Used |
| 28 | MIC-IN | MIC Amp. Input | 56 | NC | Not Used |

# ADJUSTMENTS (KX-T3908H-B)

**If your unit have below symptoms, adjust each item using remedy column from the table.**

| Symptom | Remedy |
|---|---|
| The base unit dose not respond to a call from portable handset. | Make adjustments in item(A) |
| The base unit dose not transmit or the transmit frequency is off. | Make adjustments in item(B) |
| The transmit frequency is off. | Make adjustments in item(C) |
| The transmit power output is low, and the operating distance between base unit and portable handset is less than normal. | Make adjustments in item(D) |
| The reception sensitivity of base unit is low with noise. | Make adjustments in item(E) |
| The transmit level is large or small. | Make adjustments in item(F), (G) |
| The reception level is large or small. | Make adjustments in item(H) |
| The unit does not link. | Make adjustments in item(I) |

**Unit condltion:**
Remove the antenna from P.C Board of the base unit.

**How to set the test mode**:

1. CH10 Test Mode

   Set S1 to OFF(Power OFF)
   ↓
   While pressing S21, set S1 to ON.
   After pressing S1 for 1second,
   set S21 to OFF(unit becomes
   CH10 talk test mode).

2. CH5 Test Mode

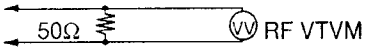
   Set S1 to OFF(Power OFF)
   ↓
   While pressing S21 and S22, set S1 to ON.
   After pressing S1 for 1second,
   set S21 and S22 to OFF(unit becomes
   CH5 talk test mode).

- Every time pressing S22, unit changes as follow.
  Talk → Standby → Talk → Standby
- Every time pressing S21, unit changes as follow.
  CH10 → CH1 → CH2 → CH3.....CH9 → CH10
- When setting S1 to OFF, unit releases from test mode.

When replacing these parts, adjust as shown in table below table.

| Replace Parts | Adjustment items | Test Mode | Adjustment Point | Procedure |
|---|---|---|---|---|
| IC2, T3 | (A) RX VCO Adjustment | CH10 Talk | T3 | 1. Set S1, S5 to ON.<br>2. Adjust T3 so that the reading of the Digital Voltmeter is 1.4V±0.2 V. |
| D1 ,D2, T5 | (B) TX VCO Adjustment | CH10 Talk | T5 | 1. Set S1, S4 to ON.<br>2. Adjust T5 so that the reading of the Digital Voltmeter is 2.1 V±0.2 V. |
| DUP1, T2, TC1, X2 | (C) TX Frequency Adjustment | CH10 Talk | TC1 | 1. Set S1, S6 to ON.<br>2. Adjust TC1 so that the reading of the frequency counter is 46.970 MHz±200 Hz. |

When replacing these parts, adjust as shown in table below.

| Replace Parts | Adjustment items | Test Mode | Adjustment Point | Procedure |
|---|---|---|---|---|
| T4, Q4 | (D) TX Power Adjustment | CH10 Talk | T4 | 1. Set S1, S7 to ON.<br>  <br>2. Adjust T4 so that the reading of the RF VTVM is 230mV±10mV(clock wise from peak) . |
| T1 | (E) RX Sensitivity Adjustment | CH5 Talk | T1 | 1. Set S1, S9, S10 to ON.<br>2. Apply a 40dB μVemf output from S.S.G. (modulation frequency 1kHz, dev. 3kHz).<br>3. Adjust T1 so that the reading of the RF VTVM is maximum output. |
| T2 | (F) Line Output Maximum Adjustment | CH5 Talk | T2 | 1. Set S1, S3, S9 to ON.<br>2. Apply a 40dB μVemf output from S.S.G. (modalation frequency 1kHz. dev. 3kHz). and adjust T2 so that reading of the AF VTVM is maxmum output. |
| VR102 | (G) Line Output Level Adjustment | CH5 Talk | VR102 | 1. Set S1, S3, S9 to ON.<br>2. Apply a 40dB μVemf output from S.S.G (modalation frequency 1kHz. dev. 3kHz).<br>3. Adjust VR102 so that the reading of the AF VTVM is -5dBm± 0.5dBm(600Ω load). |
| VR101 | (H) Line Input Modulation Adjustment | CH5 Talk | VR101 | 1. Set S1, S2, S8, S9 to ON.<br>2. Input via loop simulator 1.0kHz, -20.0dBm (measured at T-R) signal.<br>3. Apply a 40 dB μVemf output from S.S.G. (modulation frequency 1kHz, dev. 0kHz).<br>4. Adjust VR101 so that the reading of the FM Deviation Meter is 3.5kHz±0.1kHz. |
| VR103, IC2 | (I) CPU Data Modulation Factor Adjustment | CH5 Talk | VR103 | 1. Set S1, S11 to ON.<br>2. Apply a 0dB μVemf output from S.S.G. (modulation frequency 1kHz, dev. 0kHz).<br>3. Adjust VR103 so that the oscilloscope becomes Low→High. |

**The connection of adjustment equipments are as shown in pages 13, 14.**

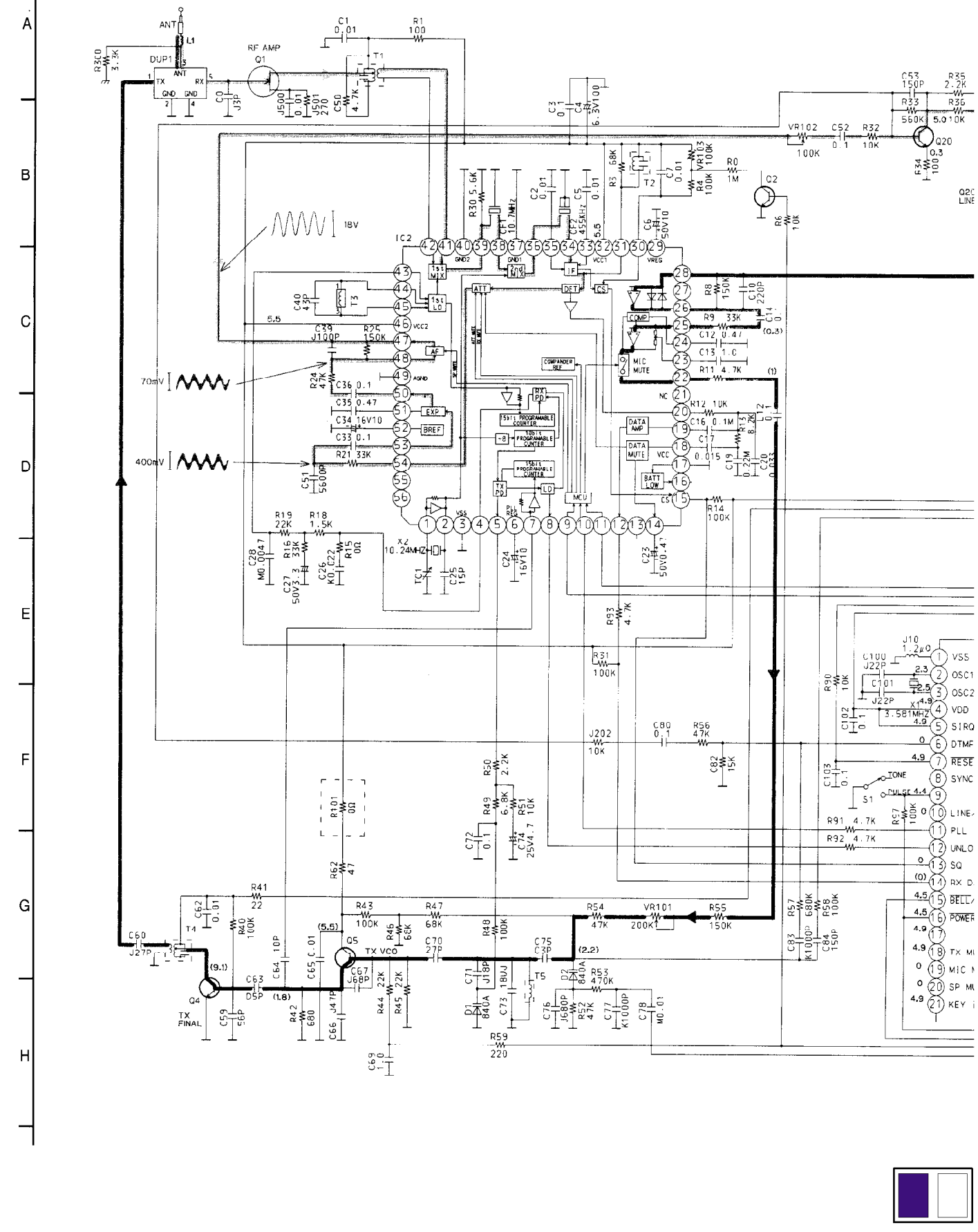
## ■ FOR SCHEMATIC DIAGRAM [KX-T3908H-B (pages 17, 18)]

1. S1: Dialing Mode Selector Switch.
2. S2:. Handset Locator Switch.
3. DC voltage measurements are taken with electronic voltmeter from negative voltage line.

**This schematic diagram may be modified at any time with development of new technology.**

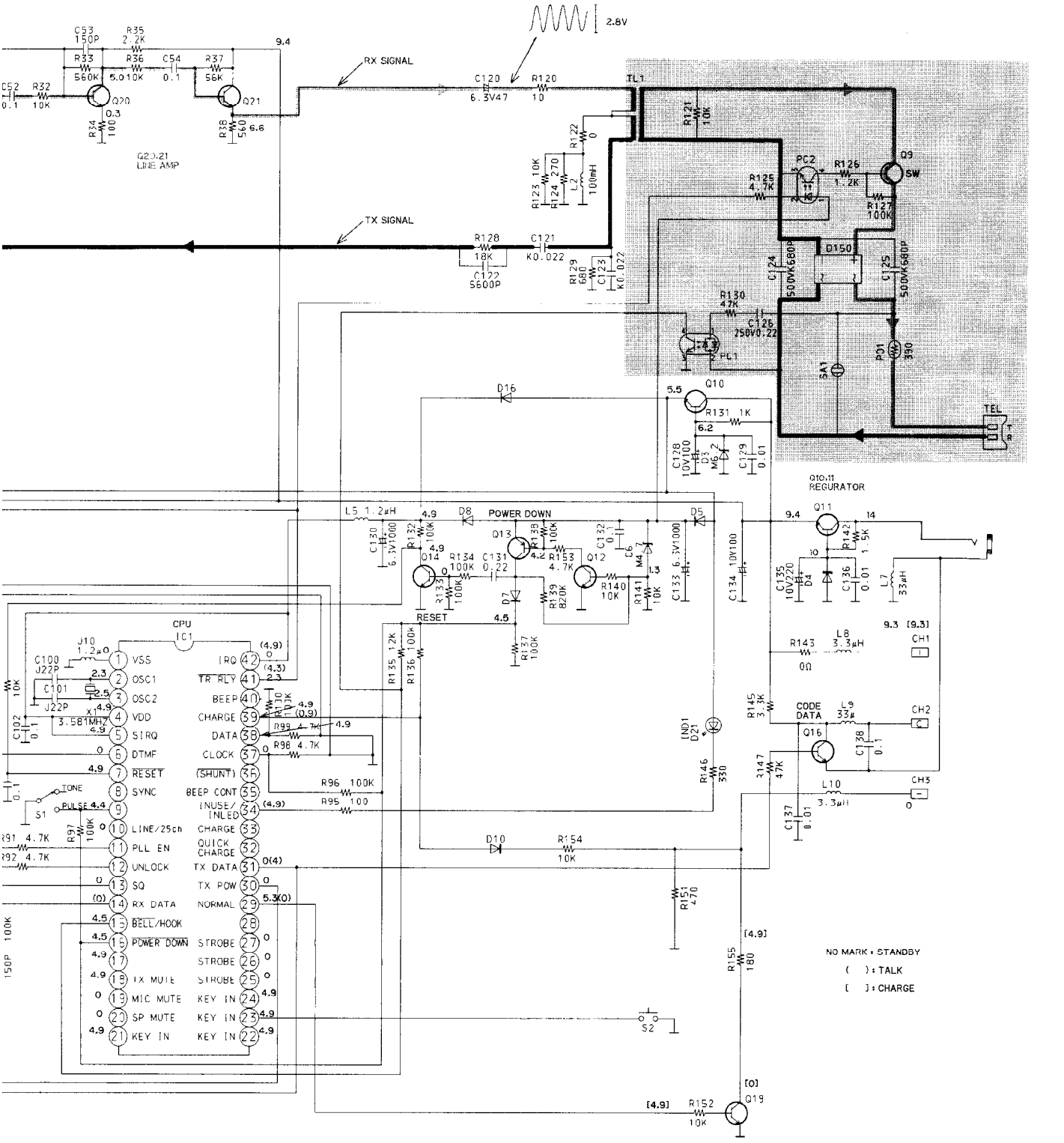
**Important Safety Notice**

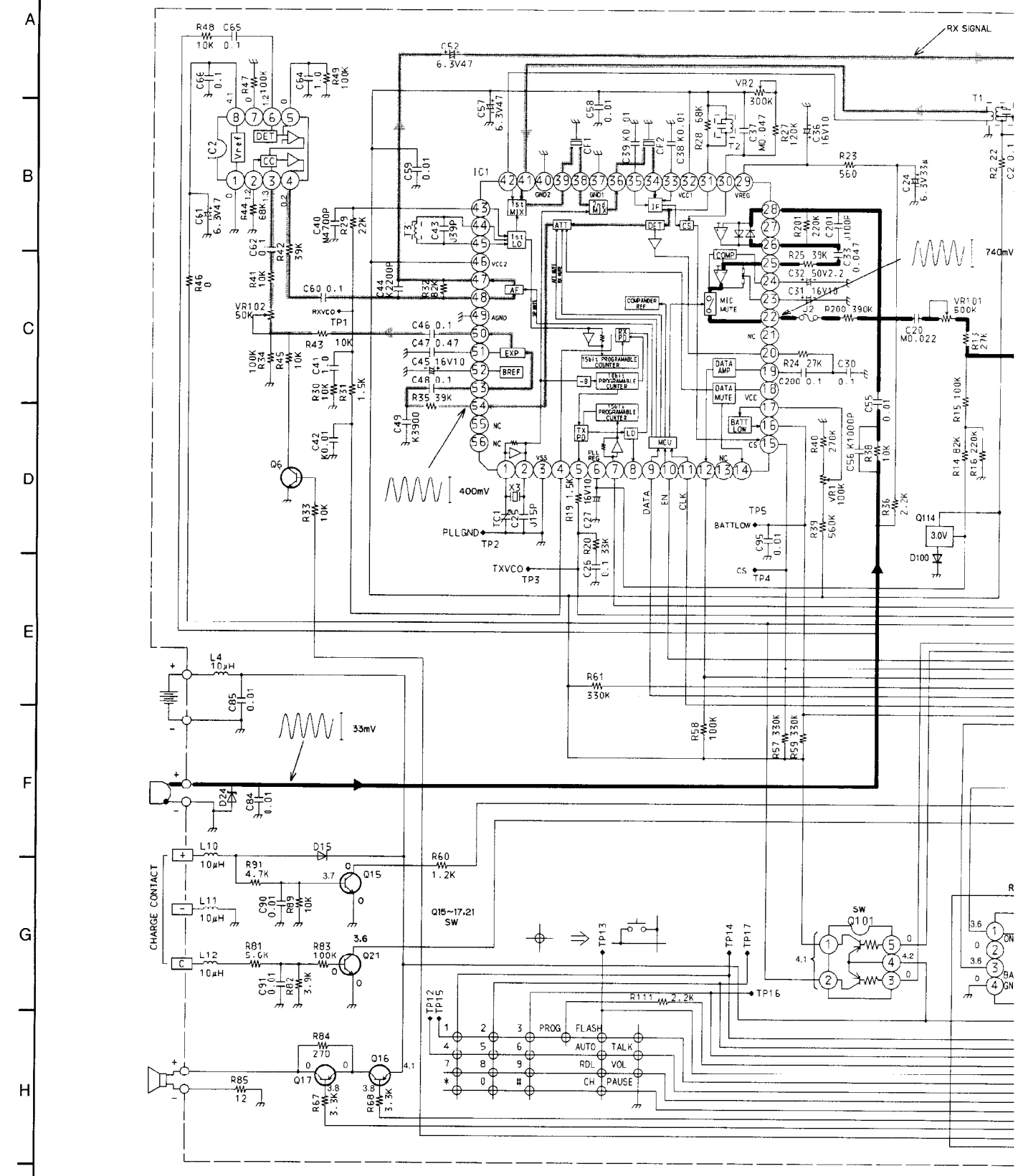
The shaded area on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards.
When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.


1
2
3
4
5
6
A
B
C
D
E
F
G
H
ANT
L1
DUP1
TX
RX
GND
RF AMP
Q1
T1
IC2
18V
70mV
400mV
X2
10.24MHZ
TX VCO
TX FINAL
Q4
Q5
T4
T5
Q20
Q2
T2
T3
VR101
VR102
VR103
J10
S1
TONE
PULSE
3.581MHZ
VSS
OSC1
OSC2
VDD
SIRQ
DTMF
RESE
SYNC
LINE
PLL
UNLO
SQ
RX D
BELL
POWER
TX MU
MIC M
SP MU
KEY
MIC MUTE
DATA AMP
DATA MUTE
BATT LOW
MCU
VCC
VREG
AGND
COMP
DET
ATT
AF
MUX
LO
IF
EXP
BREF
COMPANDER REF
NC

# TIC DIAGRAM (KX-T3908H-B)

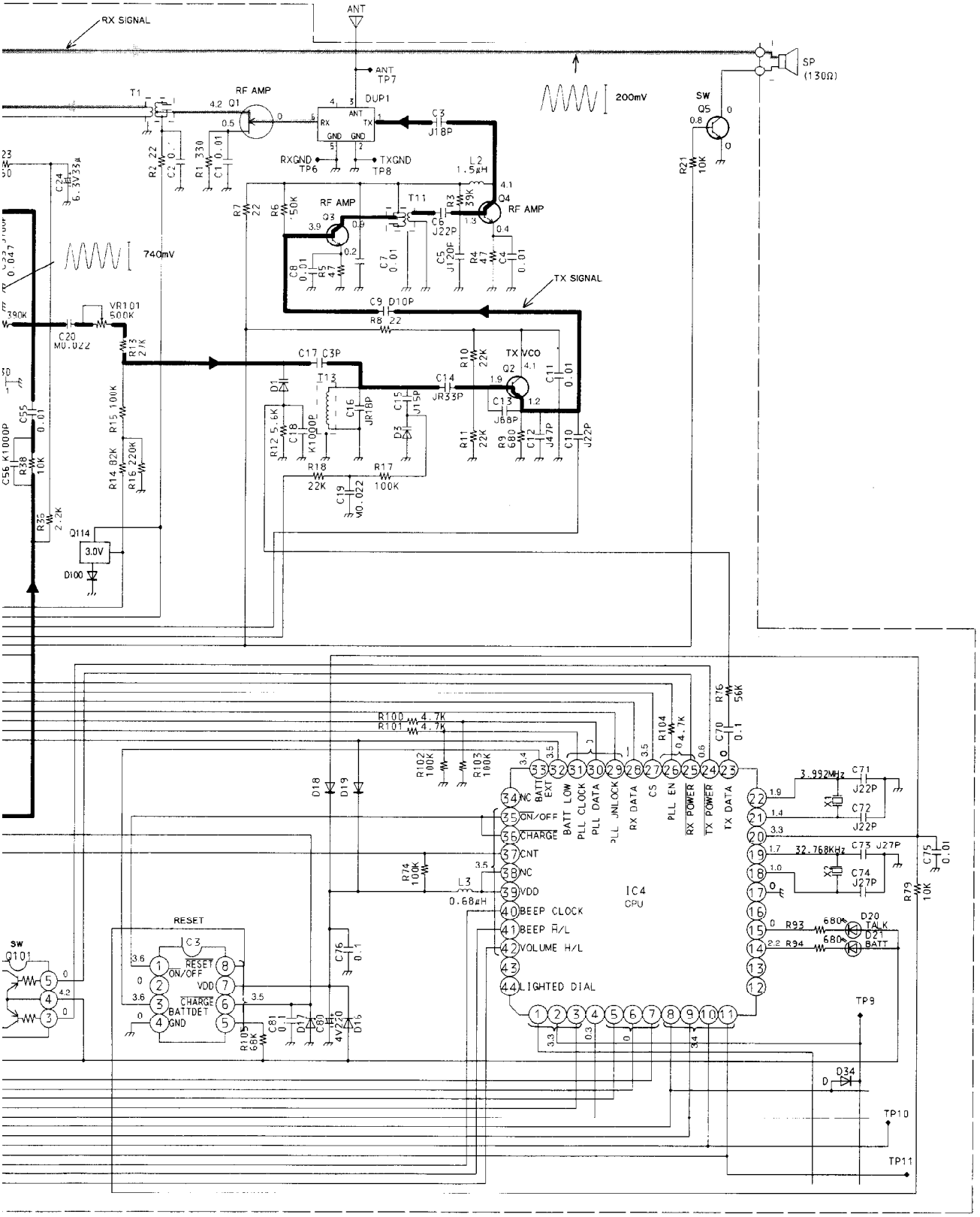
6 | 7 | 8 | 9 | 10 | 11 | 12




RX SIGNAL
IC1
IC2
VR2
300K
T1
R23
560
740mV
VR102
50K
TP1
RXVCO
C46 0.1
C47 0.47
C45 16V10
C48 0.1
R35 39K
C49
K3900
400mV
TP2
PLLGND
TXVCO
TP3
DATA
EN
CLK
TP5
BATTLOW
TP4
CS
Q114
3.0V
D100
VR101
500K
C20
M0.022
R200 390K
R24 27K
C30
C200 0.1
0.1
C55
0.01
R15 100K
R14 82K
R16 220K
R38
10K
C56 K1000P
R40
270K
VR1
100K
R36
2.2K
L4
10μH
C85
0.01
33mV
R61
330K
R58
100K
R57 330K
R59 330K
D24
C84
0.01
L10
10μH
D15
R91
4.7K
Q15
R60
1.2K
Q15~17,21
SW
CHARGE CONTACT
L11
10μH
C90
0.01
R89
10K
L12
10μH
R81
5.6K
R83
100K
Q21
3.6
C91
0.01
R82
3.9K
TP13
TP14
TP17
TP16
R111 2.2K
TP12
TP15
SW
Q101
PROG
FLASH
AUTO
TALK
RDL
VOL
CH
PAUSE
R84
270
Q16
Q17
R85
12
R67
3.3K
R68
3.3K

# DIAGRAM (KX-T3908R-B)

6 | 7 | 8 | 9 | 10 | 11 | 12



# ADJUSTMENTS (KX-T3908R-B)

**If your unit have below symptoms, adjust each item using remedy column from the table.**

| Symptom | Remedy |
|---|---|
| The movement of Battery Low Indicator is wrong. | Make adjustments in item(A) |
| The base unit dose not respond to a call from portable handset. | Make adjustments in item(B) |
| The base unit dose not transmit or the transmit frequency is off. | Make adjustments in item(C) |
| The transmit frequency is off. | Make adjustments in item(D) |
| The transmit power output is low, and the operating distance between base unit and portable handset is less than normal. | Make adjustments in item(E) |
| The reception sensitivity of base unit is low with noise. | Make adjustments in item(F) |
| Does not link between base unit and portable handset. | Make adjustments in item(G), (H) |
| The reception level is large or small. | Make adjustments in item(I) |
| The transmit level is large or small. | Make adjustments in item(J) |

**Unit condition:**

1. Remove the antenna lead wire from P.C Board of portable handset.
2. Power Supply: DC 3.9V
3. Volume switch: HIGH
4. Speaker Load: 130 Ω

## How to set the test mode.

CH10 Test Mode

1. After connecting the diode D33, and apply a power supply DC 3.9 V.
   (The unit becomes CH10 Talk)
2. Press the talk switch.
   (The unit becomes CH10 standly)
3. Press the Talk Switch.
4. Press the cannel switch,

CH10 → CH1 → CH2·····CH9

When replacing these parts, adjust as shown in table below.

| Replace Parts | Adjustment items | Test Mode | Adjustment Point | Procedure |
|---|---|---|---|---|
| VR1 | (A) Battery Low Adjustment | CH10 Talk | VR1 | 1. Set S1 to ON.<br>2. Set the power supply voltage to DC 3.57V, and adjust VR1 so that the reading of oscilloscope is High → Low. |
| IC1, TC1, X3, T13 | (B) TX VCO Voltage Adjustment | CH10 Talk | T13 | 1. Set S2 to ON.<br>2. Adjust T13 so that the reading of digital voltmeter is 2.0 V ±0.1 V. |
| IC1, TC1, X3, T3 | (C) RX VCO Voltage Adjustment | CH10 Talk | T3 | 1. Set S3 to ON.<br>2. Adjust T3 so that the reading of digital voltmeter is 1.4 V±0.1 V. |
| TC1, X3, IC1 | (D) TX frequency Adjustment | CH10 Talk | TC1 | 1. Set S4 to ON.<br>2. Adjust TC1 so that the reading of frequency counter is 49.970 MHz±200 Hz. |

When replacing these parts, adjust as shown in table below.

| Replace Parts | Adjustment items | Test Mode | Adjustment Point | Procedure |
|---|---|---|---|---|
| T11 | (E) TX Output Adjustment | CH10 Talk | T11 | 1. Set S5 to ON.<br>2. Adjust T11 for 280mV~430mV output on RF VTVM. |
| T1, T3 | (F)RX Adjustment<br>(Speaker Output)<br>(2nd IF Output) | CH1 Talk | T2<br>T1 | 1. Set S6, S7, S8, to ON.<br>2. Apply a 45 dB $\mu$ Vemf output from S.S.G. (modulation frequency 1 kHz, dev. 3kHz)<br>3. Adjust T2 so that the reading of AF VTVM is maximum output.<br>4. Apply a 45 dB $\mu$ Vemf output from S.S.G. (modulation frequency 1kHz, dev. 3kHz)<br>5. Adjust T1 so that the reading of RF VTVM is maximum output. |
| VR2 | (G) Carrier Sensitivity Adjustment | CH1 Stand-by | VR2 | 1. Set S6, S9 to ON.<br>2. Apply a 7 dB $\mu$ Vemf output from S.S.G.(modulation frequency 1kHz, dev. 0kHz) and adjust VR2 when oscilloscope becomes to low. |
| | (H) Data Moudulation of Confirmation | CH10 Talk | — | 1. Set S4 to ON.<br>2. Keep pressing the flash button.<br>3. Confirm for a 6.0~9.0 kHz FM Deviation Meter reading. |
| VR102 | (I) Speaker Output Levle Adjustment | CH10 Talk | VR102 | 1. Set S6, S8 to ON.<br>2. Apply a 45 dB $\mu$ Vemf output from S.S.G.(modulation frequency 1kHz, dev. 3kHz).<br>3. Adjust VR102 so that the reading of AF VTVM is -27dBm. |
| VR101 | (J) MIC Modulation Factor Adjustment | CH10 Talk | VR101 | 1. Set S4, S10 to ON.<br>2. Apply a MIC signal (1kHz, -40 dBm at 600 Ω load).<br>3. Adjust VR 101 so that the reading of FM Deviation Meter is 2.5kHz±0.1kHz. |

**Thc connections of adjustment equipments are as shown in pages 23, 24.**

## ■ For SCHEMATIC DIAGRAM [KX-T3908R-B (Pages 19, 20)]

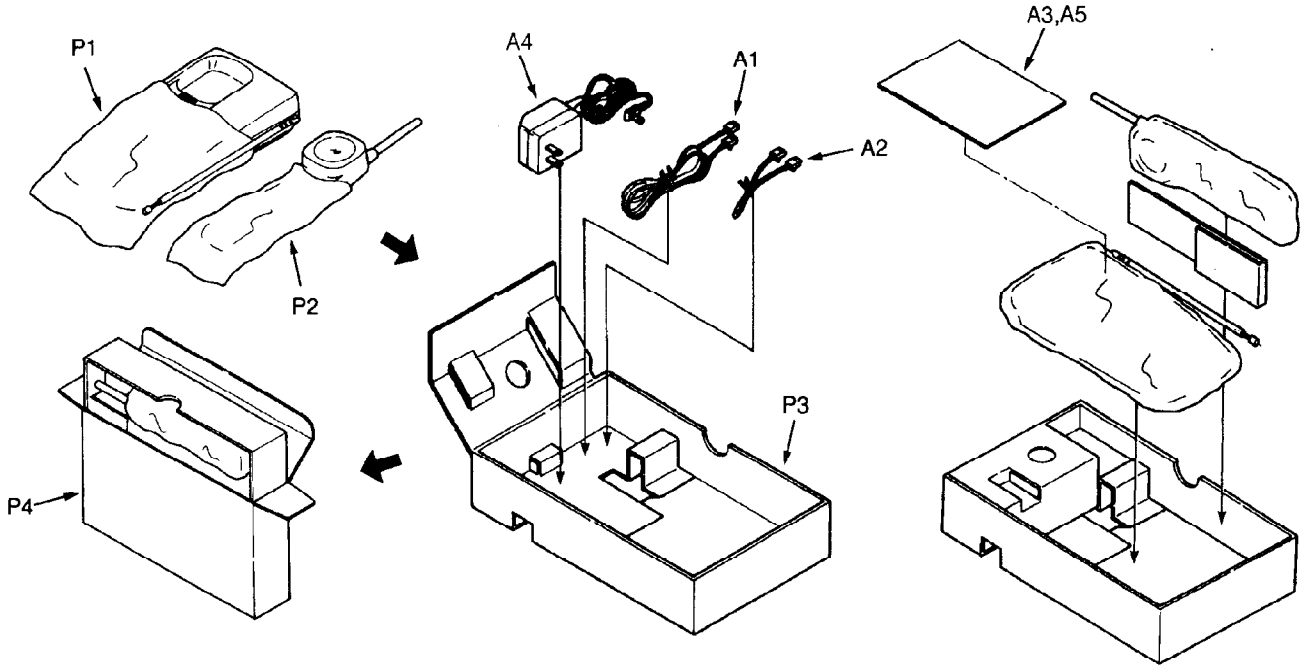
1. SW1~10, 12: Dialing Switch
2. SW11: Tone Switch
3. SW13: Program Switch
4. SW14: Flash Switch
5. SW15: Auto Switch
6. SW16: Redial Switch
7. SW17: Channel Switch
8. SW19: Talk Switch
9. SW20: Volume/Ringer Switch
10. SW21: Pause Switch
11. DC voltage measurements are taken with electronic voltmeter from negative voltage line.
    (Talk Posittion)

**This schematic diagram may be modified at any time with the development of new technology.**

# FREQUENCY TABLE (MHz)

| | KX-T3908H-B | | KX-T3908R-B | |
|---|---|---|---|---|
| | Transmit Frequency | Receive Frequency | Transmit Frequency | Receive Frequency |
| CH1 | 46.610 | 49.670 | 49.670 | 46.610 |
| CH2 | 46.630 | 49.845 | 49.845 | 46.630 |
| CH3 | 46.670 | 49.860 | 49.860 | 46.670 |
| CH4 | 46.710 | 49.770 | 49.770 | 46.710 |
| CH5 | 46.730 | 49.875 | 49.875 | 46.730 |
| CH6 | 46.770 | 49.830 | 49.830 | 46.770 |
| CH7 | 46.830 | 49.890 | 49.890 | 46.830 |
| CH8 | 46.870 | 49.930 | 49.930 | 46.870 |
| CH9 | 46.930 | 49.990 | 49.990 | 46.930 |
| CH10 | 46.970 | 49.970 | 49.970 | 46.970 |

# ACCESSORIES AND PACKING MATERIALS



# RF SPECIFICATION

**BASE UNIT (KX-T3908H-B)**

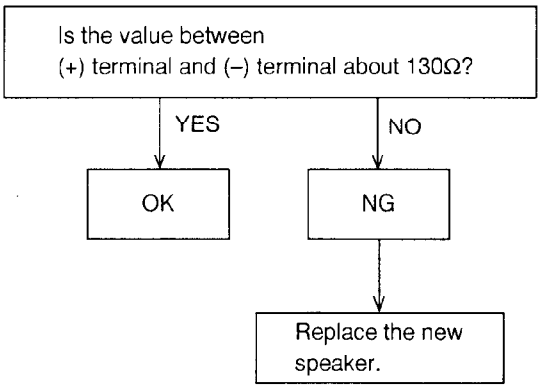
| Item | Value | Refer to —. | Remarks |
|---|---|---|---|
| TX Frequency | 46.970 MHz±200Hz | Page 11 (C) | at CH10 |
| TX Power | 230 mV±10mV | Page 12 (D) | |
| TX Modulation factor | 3.3 kHz~3.7 kHz | ——— | |
| TX Modulation Distortion | Less than 7% | ——— | |
| TX Max. Modulation factor | 5.5 kHz~6.5 kHz | ——— | |
| Data Modulation factor | 5.5 kHz~6.5 kHz | ——— | |

**PORTABLE HANDSET (KX-T3908R-B)**

| Item | Value | Refer to —. | Remarks |
|---|---|---|---|
| Practical Sensitivity | Less than 9 dBμV | ——— | at CH5 |
| Carrier Sensitivity | Less than 10 dBμV | ——— | |
| TX Frequency | 49.970 MHz±200Hz | Page 25 (D) | at CH10 |
| TX Output | 280 mV~430 mV | Page 26 (E) | at CH10 (Antenna soldering point 50Ω Load) |
| Data Modulation factor | 6.0 kHz/dev~9.0 kHz/dev | Page 26 (H) | at CH10 |
| MIC Modulation factor | 2.2 kHz/dev~2.8 kHz/dev | ——— | at CH10 (MIC terminal -40dBm Input) |

# HOW TO CHECK THE PORTABLE HANDSET SPEAKER

1. Prepare the digitial voltmeter, and set the selector knob to ohm meter.
2. Put the probes at the speaker terminals as shown in Fig.13
3. 



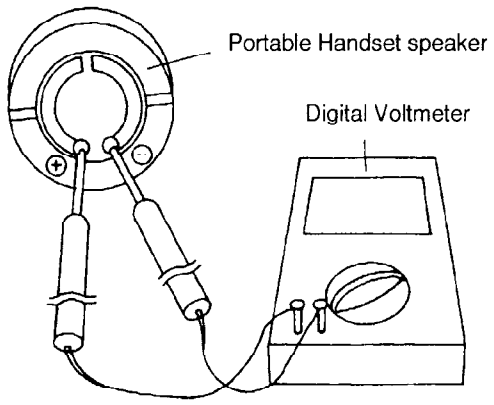




Fig. 13

# BLOCK DIAGRAM (KX-T3908H-B)

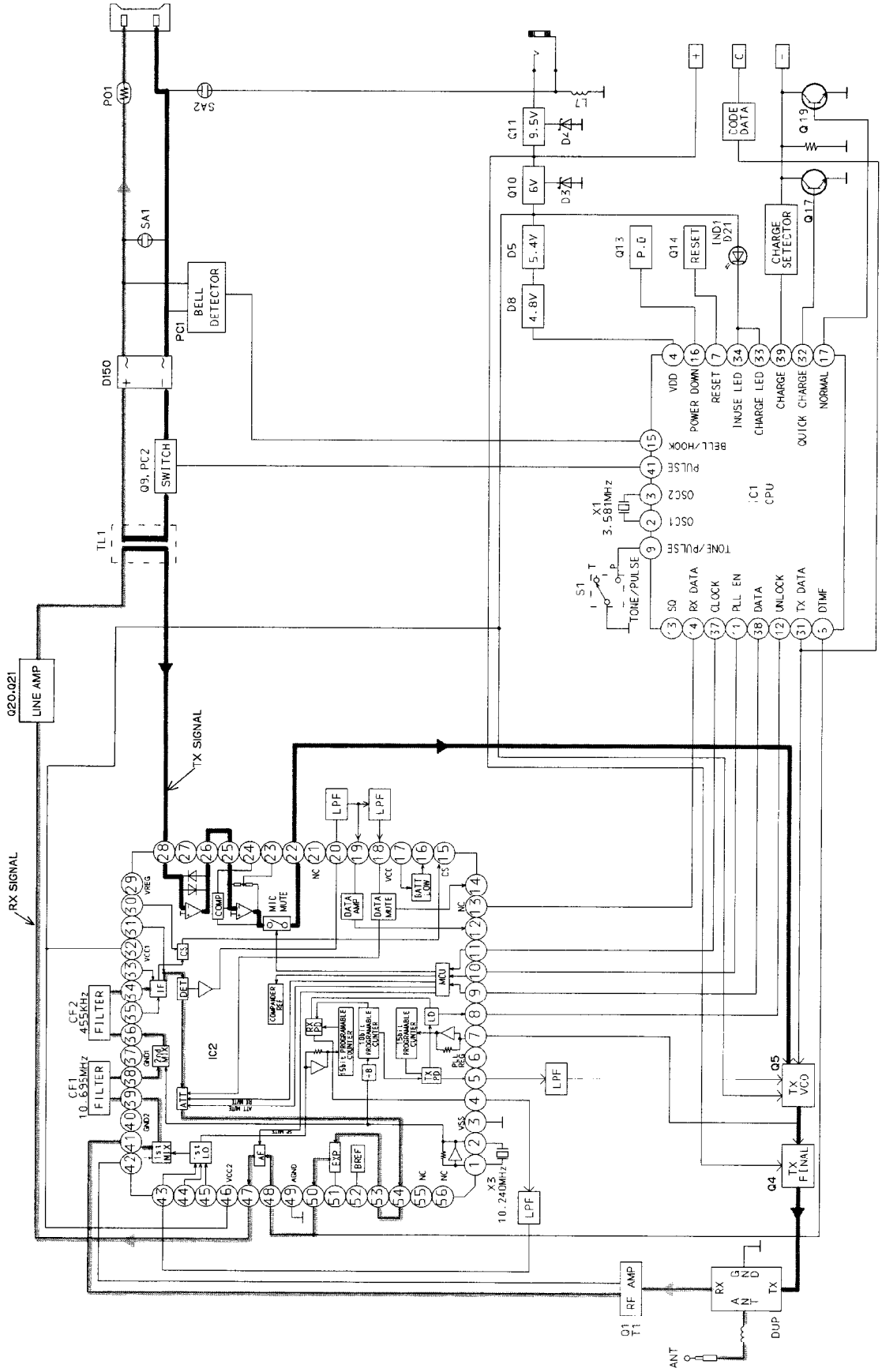



Fig. 22

# BLOCK DIAGRAM (KX-T3908R-B)

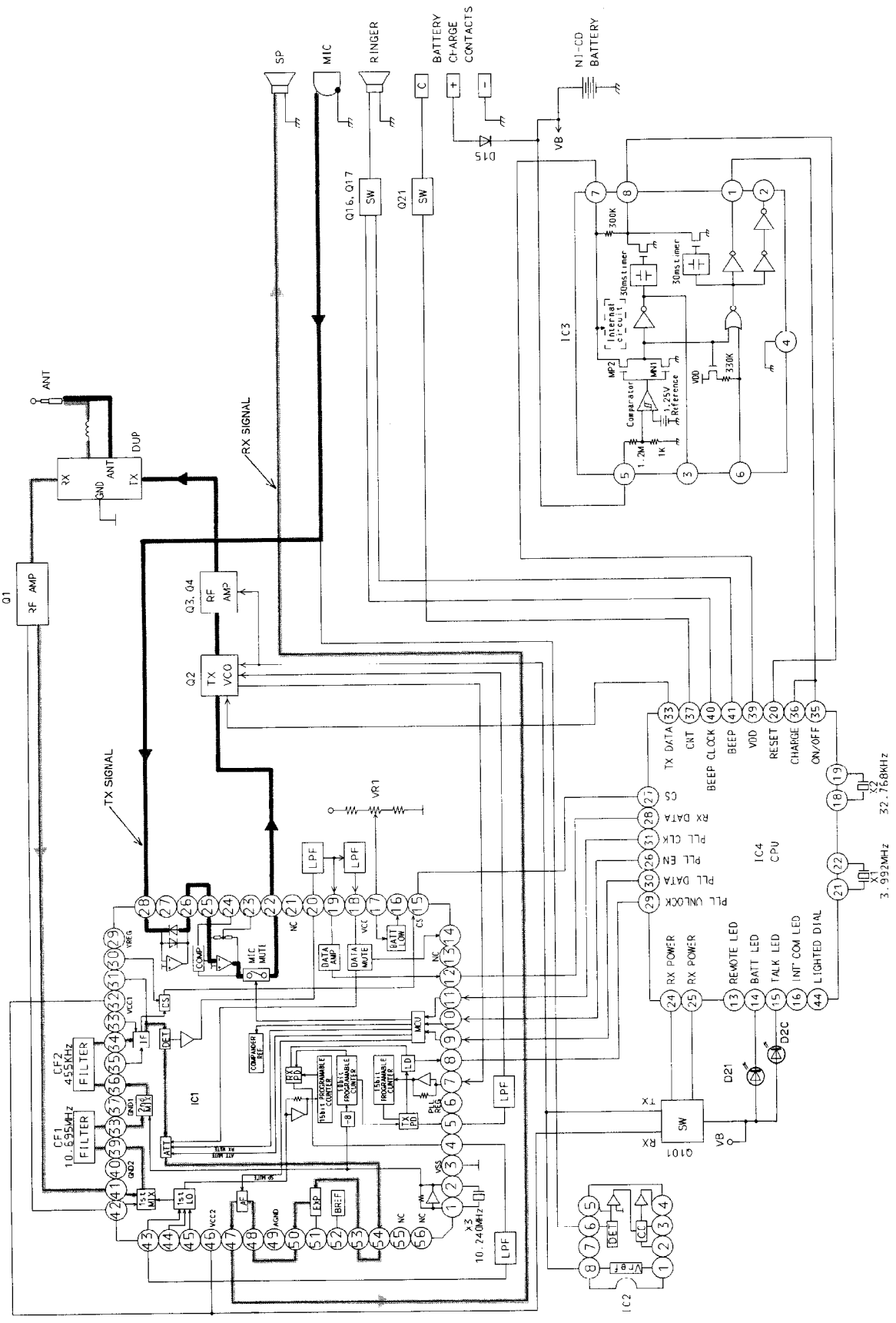
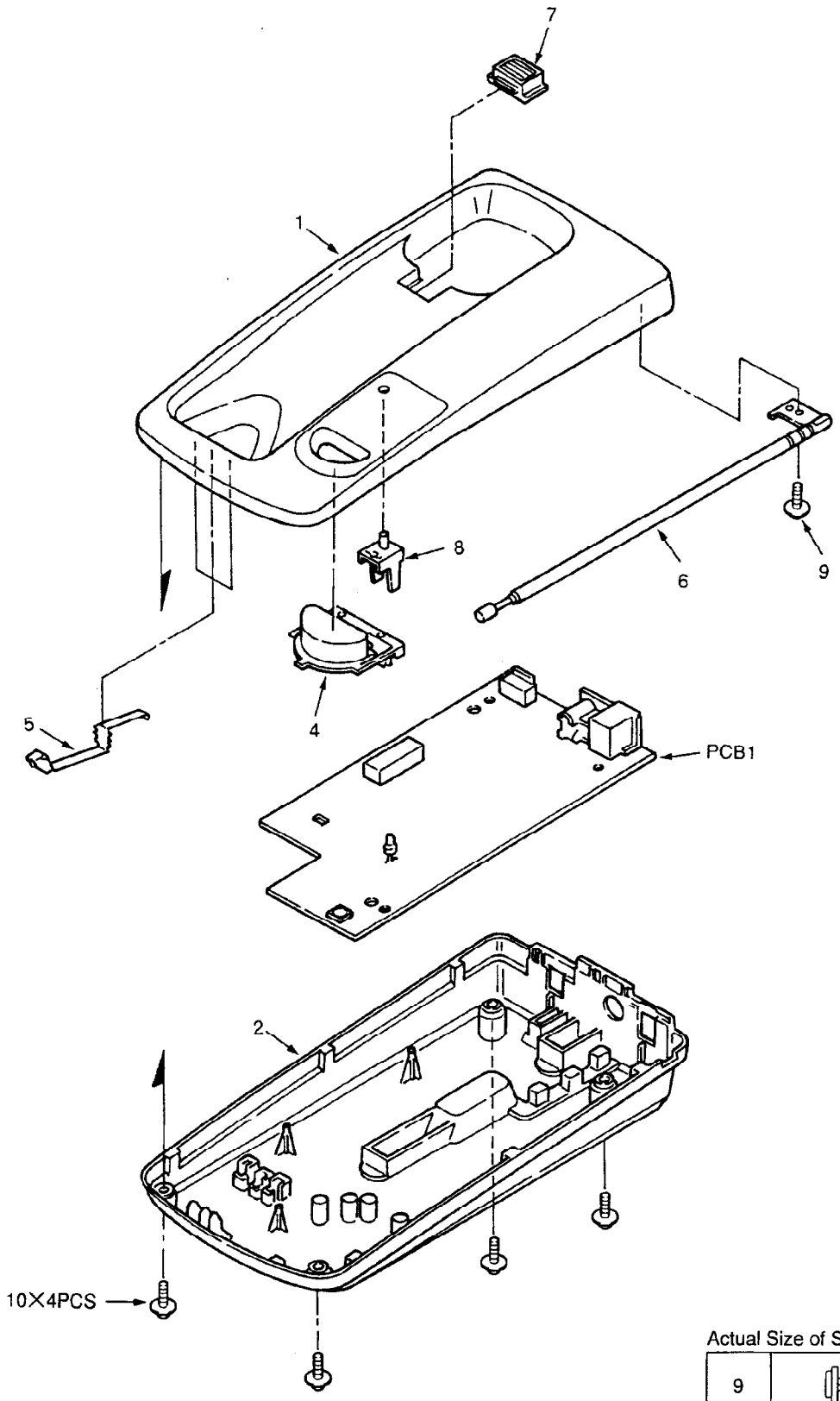



Fig. 35

# CABINET AND ELECTRICAL PARTS LOCATION (KX-T3908H-B)

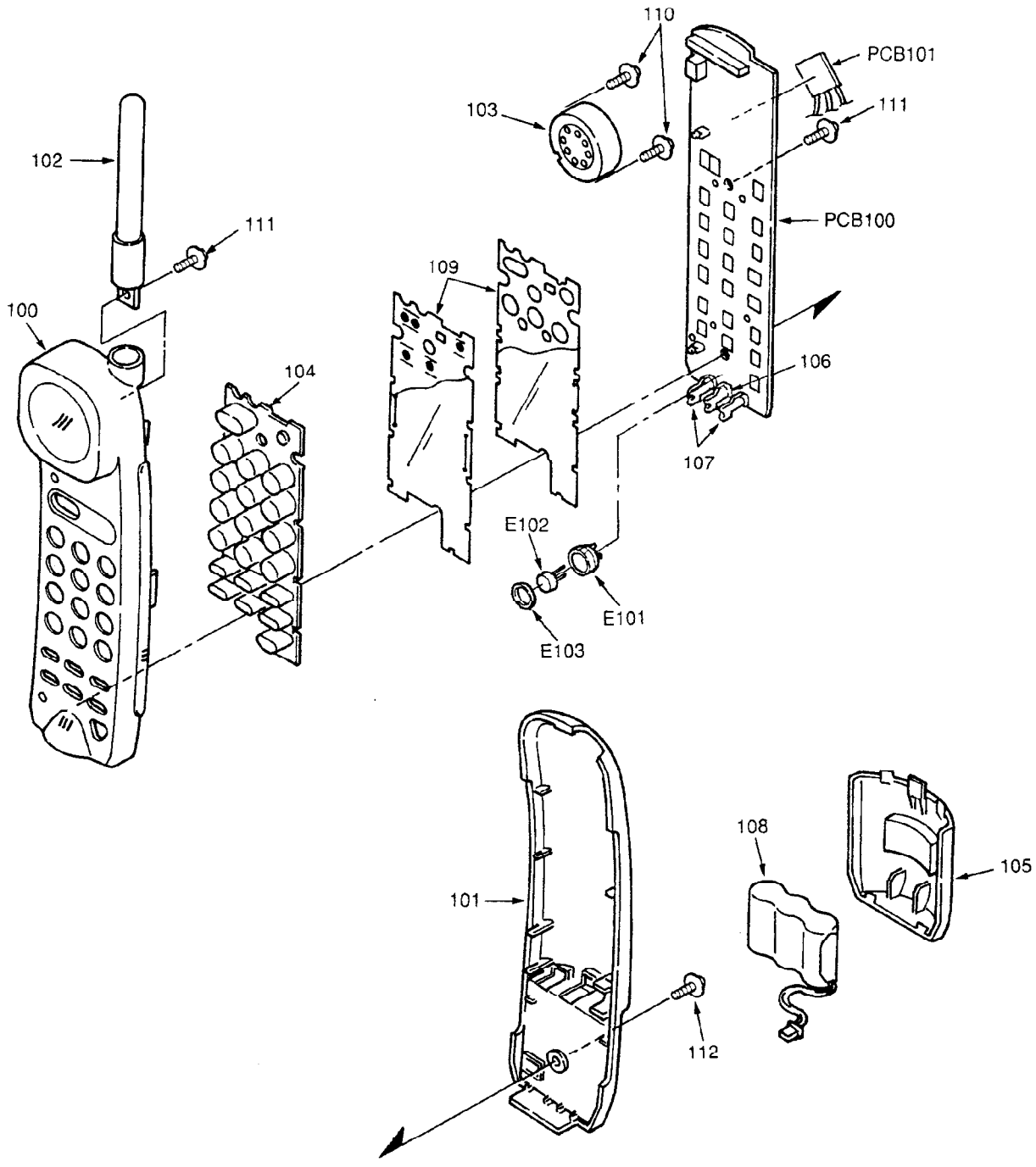



Actual Size of Screws

| | |
|---|---|
| 9 | |
| 10 | |

Fig. 46

# CABINET AND ELECTRICAL PARTS LOCATION (KX-T3908R-B)




Actual Size of Screws

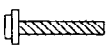
| | |
|---|---|
| 111 | |
| 112 |  |

Fig. 47

**This replacement parts list is U. S. A. version only.** Refer to the simplified manual(cover) for Canada or other areas.

# REPLACEMENT PARTS LIST

## KX-T3908H-B

1. RTL (Retention Time Limited)

Note: The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

2. Important safety notice

Components identified by the ⚠ mark special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

3. The S mark indicates service standard parts and may differ from production parts.

4. RESISTORS & CAPACITORS

Unless otherwise specified.

All resistors are in ohms ( Ω ) K=1000Ω, M=1000KΩ

All capacitors are in MICRO FARADS ( μF ) P=μμF

*Type &Wattage of Resistor

Type

| | | |
|---|---|---|
| ERC:Solid | ERX:Metal Film | PQ4R:Carbon |
| ERD:Carbon | ERG:Metal Oxide | ERS:Fusible Resistor |
| PQRD:Carbon | ER0:Metal Film | ERF:Cement Resistor |

Wattage

| | | | | | |
|---|---|---|---|---|---|
| 10,16:1/8W | 14,25:1/4W | 12:1/2W | 1:1W | 2:2W | 3:3W |

*Type & Voltage of Capacitor

Type

| | |
|---|---|
| ECFD:Semi-Conductor | ECCD,ECKD,ECBT,PQCBC : Ceramic |
| ECQS:Styrol | ECQE,ECQV,ECQG : Polyester |
| PQCUV:Chip | ECEA,ECSZ : Electrolytic |
| ECQMS:Mica | ECQP : Polypropylene |

Voltage

| ECQ Type | ECQG ECQV Type | ECSZ Type | Others | |
|---|---|---|---|---|
| 1H: 50V | 05: 50V | 0F:3.15V | 0J :6.3V | 1V :35V |
| 2A:100V | 1:100V | 1A:10V | 1A :10V | 50,1H:50V |
| 2E:250V | 2:200V | 1V:35V | 1C :16V | 1J :63V |
| 2H:500V | | 0J:6.3V | 1E,25:25V | 2A :100V |

| Ref. No. | Part No. | Part Name & Description | Pcs/Set |
|---|---|---|---|
| | | CABINET AND ELECTRICAL PARTS | |
| 1 | PQKM10206Y2 | UPPER CABINET | 1 |
| 2 | PQKF10147Y2 | LOWER CABINET | 1 |
| 3 | PQHG316Z | RUBBER, FOOT | 2 |
| 4 | PQBC10191Z2 | BUTTON | 1 |
| 5 | PQJT10104Z | BATTERY TERMINAL | 3 |
| 6 | XEAPQK170D | ANTENNA | 1 |
| 7 | PQKE46Y3 | HANGER S | 1 |
| 8 | PQHR10433Z | LED SPACER | 1 |
| 9 | XTW3+S10P | SCREW | 1 |
| 10 | XTW3+S14P | SCREW | 4 |

| Ref. No. | Part No. | Part Name & Description | Pcs/Set |
|---|---|---|---|
| | | P.C.BOARD PARTS | |
| PCB1 | PQWPT3908BH | P.C.BOARD ASS'Y (RTL) | 1 |
| | | (ICS) | |
| IC1 | MN150409KRF | IC | 1 |
| IC2 | AN6185FA | IC | 1 |
| | | (TRANSISTORS) | |
| Q1 | 2SK543 | TRANSISTOR(SI) | 1 |
| Q2 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081or 2SC4155) | 1 |
| Q4 | PQVTMSC2295C | TRANSISTOR(SI) | 1 |
| Q5 | 2SC2412K | TRANSISTOR(SI) | 1 |
| Q9 | 2SA1776P | TRANSISTOR(SI) ⚠S (or 2SA1625 or 2SA1776Q) | 1 |
| Q10 | 2SD1991A | TRANSISTOR(SI) | 1 |
| Q11 | 2SD2136 | TRANSISTOR(SI) | 1 |
| Q12 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081or 2SC4155) | 1 |
| Q13 | 2SB709A | TRANSISTOR(SI) S (or 2SA1162GRTE85L) | 1 |
| Q14 | 2SD601R | TRANSISTOR(SI) S (or 2SC2712GRTE85L) | 1 |
| Q16 | 2SD1994A | TRANSISTOR(SI) | 1 |
| Q19 | 2SD1991A | TRANSISTOR(SI) | 1 |
| Q20 | 2SD601R | TRANSISTOR(SI) S (or 2SC2712GRTE85L) | 1 |
| Q21 | 2SD601R | TRANSISTOR(SI) S (or 2SC2712GRTE85L) | 1 |
| | | (DIODES) | |
| D1 | MA840ATAKU | DIODE(SI) | 1 |
| D2 | MA840ATAKU | DIODE(SI) | 1 |
| D3 | MA4062 | DIODE(SI) | 1 |
| D4 | MA4100 | DIODE(SI) | 1 |
| D5 | 1SS120 | DIODE(SI) | 1 |
| D6 | MA4047 | DIODE(SI) | 1 |
| D7 | 1SS120 | DIODE(SI) | 1 |
| D8 | 1SS120 | DIODE(SI) | 1 |
| D10 | 1SS120 | DIODE(SI) | 1 |
| D16 | 1SS120 | DIODE(SI) | 1 |
| D21 | LN31GCPHV | LED | 1 |
| D150 | PQVDS1ZB40F1 | DIODE(SI) ⚠ | 1 |
| | | (COILS AND TRANSFORMERS) | |
| L1 | PQLQZK1R5K | COIL | 1 |
| L2 | PQLQZI104J | COIL | 1 |
| L5 | PQLQZM1R2K | COIL | 1 |
| L7 | ELEPK330KA | COIL | 1 |
| L8 | PQLQZM3R3K | COIL | 1 |
| L9 | ELEPK330KA | COIL | 1 |
| L10 | PQLQZM3R3K | COIL | 1 |
| T1 | PQLA7A9 | COIL | 1 |
| T2 | PQLI2B201 | I.F. TRANSFORMER | 1 |
| T3 | PQLA7A20 | COIL | 1 |
| T4 | PQLA7A9 | COIL | 1 |
| T5 | PQLA7A22 | COIL | 1 |
| TL1 | PQLT8F3A | TRANSFORMER ⚠ | 1 |
| J10 | PQLQZM1R2K | COIL | 1 |

**This replacement parts list is U. S. A. version only.** Refer to the simplified manual(cover) for Canada or other areas.

| Ref. No. | Part No. | Part Name & Description | Pcs/Set |
|---|---|---|---|
| | | (VARIABLE RESISTORS) | |
| VR101 | EVNDXAA03B25 | VARIABLE RESISTOR | 1 |
| VR102 | EVNDXAA03B15 | VARIABLE RESISTOR | 1 |
| VR103 | EVNDXAA03B15 | VARIABLE RESISTOR | 1 |
| | | (SWITCHES) | |
| S1 | PQSS2A27W | SWITCH | 1 |
| S2 | EVQQJJ05Q | SWITCH | 1 |
| | | (CRYSTALS) | |
| X1 | PQVCJ3581N9Z | CRYSTAL OSCILLATOR | 1 |
| X2 | PQVCJ10240C5 | CRYSTAL OSCILLATOR | 1 |
| | | (PHOTO COUPLERS) | |
| PC1 | PQVIPC814K | PHOTO ELECTRIC TRANSDUCER ⚠ | 1 |
| PC2 | PQVITLP627 | PHOTO ELECTRIC TRANSDUCER ⚠ | 1 |
| | | (CERAMIC FILTERS) | |
| CF1 | PQVFSFE107MJ | CERAMIC FILTER S | 1 |
| CF2 | PQVFCFH455F1 | CERAMIC FILTER | 1 |
| | | (OTHERS) | |
| JJ1 | PQJJ2HA1Z | JACK, DC IN /TEL | 1 |
| DUP1 | PQVFDX4649B1 | CERAMIC FILTER | 1 |
| TC1 | ECRLA030E53 | TRIMMER CAPACITOR | 1 |
| PO1 | PQRPAR390N | POSISTER ⚠ | 1 |
| SA1 | PQVDRA311PT3 | VARISTOR S ⚠ | 1 |
| | | (RESISTORS) | |
| R0 | PQ4R10XJ105 | 1M | 1 |
| R1 | ERJ3GEYJ101 | 100 | 1 |
| R3 | ERJ3GEYJ683 | 68K | 1 |
| R4 | ERJ3GEYJ104 | 100K | 1 |
| R6 | ERJ3GEYJ103 | 10K | 1 |
| R8 | ERJ3GEYJ154 | 150K | 1 |
| R9 | ERJ3GEYJ333 | 33K | 1 |
| R11 | ERJ3GEYJ472 | 4.7K | 1 |
| R12 | ERJ3GEYJ103 | 10K | 1 |
| R13 | ERJ3GEYJ822 | 8.2K | 1 |
| R14 | ERDS2TJ104 | 100K | 1 |
| R15 | ERJ3GEY0R00 | 0 | 1 |
| R16 | ERJ3GEYJ333 | 33K | 1 |
| R18 | ERJ3GEYJ152 | 1.5K | 1 |
| R19 | ERJ3GEYJ223 | 22K | 1 |
| R21 | ERJ3GEYJ333 | 33K | 1 |
| R24 | PQ4R10XJ473 | 47K | 1 |
| R25 | PQ4R10XJ154 | 150K | 1 |
| R30 | ERJ3GEYJ562 | 5.6K | 1 |
| R31 | ERJ3GEYJ104 | 100K | 1 |
| R32 | ERJ3GEYJ103 | 10K | 1 |
| R33 | ERJ3GEYJ564 | 560K | 1 |
| R34 | PQ4R18XJ101 | 100 | 1 |
| R35 | ERJ3GEYJ222 | 2.2K | 1 |
| R36 | ERJ3GEYJ103 | 10K | 1 |
| R37 | ERJ3GEYJ563 | 56K | 1 |
| R38 | ERJ3GEYJ561 | 560 | 1 |
| R40 | ERJ3GEYJ104 | 100K | 1 |
| R41 | ERJ3GEYJ220 | 22 | 1 |
| R42 | ERJ3GEYJ681 | 680 | 1 |
| R43 | ERJ3GEYJ104 | 100K | 1 |
| R44 | ERJ3GEYJ223 | 22K | 1 |
| R45 | ERJ3GEYJ223 | 22K | 1 |

| Ref. No. | Part No. | Part Name & Description | Pcs/Set |
|---|---|---|---|
| R46 | ERJ3GEYJ683 | 68K | 1 |
| R47 | ERJ3GEYJ683 | 68K | 1 |
| R48 | ERJ3GEYJ104 | 100K | 1 |
| R49 | ERJ3GEYJ682 | 6.8K | 1 |
| R50 | ERJ3GEYJ222 | 2.2K | 1 |
| R51 | ERJ3GEYJ103 | 10K | 1 |
| R52 | ERJ3GEYJ473 | 47K | 1 |
| R53 | ERJ3GEYJ474 | 470K | 1 |
| R54 | ERJ3GEYJ473 | 47K | 1 |
| R55 | ERJ3GEYJ154 | 150K | 1 |
| R56 | ERJ3GEYJ473 | 47K | 1 |
| R57 | ERJ3GEYJ684 | 680K | 1 |
| R58 | ERJ3GEYJ104 | 100K | 1 |
| R59 | PQ4R18XJ221 | 220 | 1 |
| R62 | ERJ3GEYJ470 | 47 | 1 |
| R90 | ERJ3GEYJ103 | 10K | 1 |
| R91 | ERJ3GEYJ472 | 4.7K | 1 |
| R92 | ERJ3GEYJ472 | 4.7K | 1 |
| R93 | ERJ3GEYJ472 | 4.7K | 1 |
| R95 | ERJ3GEYJ101 | 100 | 1 |
| R96 | ERJ3GEYJ104 | 100K | 1 |
| R97 | ERJ3GEYJ104 | 100K | 1 |
| R98 | ERJ3GEYJ472 | 4.7K | 1 |
| R99 | ERJ3GEYJ472 | 4.7K | 1 |
| R100 | ERJ3GEYJ104 | 100K | 1 |
| R101 | PQ4R10XJ000 | 0 | 1 |
| R120 | ERJ3GEYJ100 | 10 | 1 |
| R121 | ERDS2TJ103 ⚠ | 10K | 1 |
| R122 | PQ4R10XJ000 | 0 | 1 |
| R123 | PQ4R10XJ103 | 10K | 1 |
| R124 | PQ4R10XJ271 | 270 | 1 |
| R125 | ERJ3GEYJ472 ⚠ | 4.7K | 1 |
| R126 | ERDS2TJ122 ⚠ | 1.2K | 1 |
| R127 | ERDS2TJ104 ⚠ | 100K | 1 |
| R128 | PQ4R10XJ183 | 18K | 1 |
| R129 | PQ4R10XJ681 | 680 | 1 |
| R130 | ERDS2TJ473 ⚠ | 47K | 1 |
| R131 | ERJ3GEYJ102 | 1K | 1 |
| R132 | ERJ3GEYJ104 | 100K | 1 |
| R133 | ERJ3GEYJ104 | 100K | 1 |
| R134 | ERJ3GEYJ104 | 100K | 1 |
| R135 | ERJ3GEYJ123 | 12K | 1 |
| R136 | ERJ3GEYJ104 | 100K | 1 |
| R137 | ERJ3GEYJ104 | 100K | 1 |
| R138 | ERJ3GEYJ104 | 100K | 1 |
| R139 | ERJ3GEYJ824 | 820K | 1 |
| R140 | ERJ3GEYJ103 | 10K | 1 |
| R141 | ERJ3GEYJ103 | 10K | 1 |
| R142 | PQ4R10XJ152 | 1.5K | 1 |
| R143 | PQ4R10XJ000 | 0 | 1 |
| R145 | ERJ3GEYJ332 | 3.3K | 1 |
| R146 | ERJ3GEYJ331 | 330 | 1 |
| R147 | ERJ3GEYJ473 | 47K | 1 |
| R151 | ERDS2TJ471 | 470 | 1 |
| R152 | ERJ3GEYJ103 | 10K | 1 |
| R153 | ERJ3GEYJ472 | 4.7K | 1 |
| R154 | ERJ3GEYJ103 | 10K | 1 |
| R155 | ERDS2TJ181 | 180 | 1 |
| R299 | ERJ3GEY0R00 | 0 | 1 |
| R300 | ERJ3GEYJ332 | 3.3K | 1 |
| | | | |
| J2 | ERJ3GEY0R00 | 0 | 1 |
| J20 | PQ4R18XJ000 | 0 | 1 |
| J25 | PQ4R18XJ000 | 0 | 1 |
| J26 | PQ4R18XJ000 | 0 | 1 |
| J27 | PQ4R18XJ000 | 0 | 1 |
| J50 | ERJ3GEY0R00 | 0 | 1 |
| J90 | ERJ3GEY0R00 | 0 | 1 |

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| Ref. No. | Part No. | Part Name & Description | | Pcs/Set |
|---|---|---|---|---|
| J120 | ERJ3GEY0R00 | 0 | | 1 |
| J124 | ERJ3GEY0R00 | 0 | | 1 |
| J125 | ERJ3GEY0R00 | 0 | | 1 |
| J127 | ERJ3GEY0R00 | 0 | | 1 |
| J172 | PQ4R18XJ000 | 0 | | 1 |
| J199 | ERJ3GEY0R00 | 0 | | 1 |
| J200 | PQ4R18XJ000 | 0 | | 1 |
| J202 | PQ4R10XJ103 | 0 | | 1 |
| J208 | ERJ3GEY0R00 | 0 | | 1 |
| J211 | ERJ3GEY0R00 | 0 | | 1 |
| J216 | PQ4R18XJ000 | 0 | | 1 |
| J218 | ERJ3GEY0R00 | 0 | | 1 |
| J251 | PQ4R18XJ000 | 0 | | 1 |
| J252 | PQ4R18XJ000 | 0 | | 1 |
| J321 | ERJ3GEY0R00 | 0 | | 1 |
| J330 | ERJ3GEY0R00 | 0 | | 1 |
| J331 | ERJ3GEY0R00 | 0 | | 1 |
| J501 | ERJ3GEYJ271 | 0 | | 1 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | (CAPACITORS) | | |
| C0 | ECUV1H030CCV | 3P | | 1 |
| C1 | ECUV1H103KBV | 0.01 | S | 1 |
| C2 | ECUV1H103KBV | 0.01 | S | 1 |
| C3 | ECUV1H104ZFV | 0.1 | S | 1 |
| C4 | ECEA0JKS101 | 100 | | 1 |
| C5 | ECUV1H103KBV | 0.01 | S | 1 |
| C6 | ECEA1HKS100 | 10 | | 1 |
| C7 | PQCUV1H103KB | 0.01 | S | 1 |
| C10 | ECUV1H221JCV | 220P | | 1 |
| C12 | PQCUV1C474ZF | 0.47 | | 1 |
| C13 | PQCUV1H105JC | 1 | S | 1 |
| C14 | ECUV1H104ZFV | 0.1 | S | 1 |
| C16 | PQCUV1E104MD | 0.1 | S | 1 |
| C17 | PQCUV1H153KB | 0.015 | | 1 |
| C19 | PQCUV1C224ZF | 0.22 | S | 1 |
| C20 | PQCUV1H333JC | 0.033 | S | 1 |
| C23 | ECEA1HKSR47 | 0.47 | | 1 |
| C24 | ECEA1HU100 | 10 | S | 1 |
| C25 | ECUV1H150JCV | 15P | | 1 |
| C26 | ECUV1H223KBV | 0.022 | | 1 |
| C27 | ECEA1HKS3R3 | 3.3 | S | 1 |
| C28 | ECUV1H472KBV | 0.0047 | S | 1 |
| C33 | ECUV1H104ZFV | 0.1 | S | 1 |
| C34 | ECEA1HU100 | 10 | S | 1 |
| C35 | PQCUV1C474ZF | 0.47 | | 1 |
| C36 | ECUV1H104ZFV | 0.1 | S | 1 |
| C39 | PQCUV1H101JC | 100P | | 1 |
| C40 | ECUV1H430JGV | 43P | | 1 |
| C50 | ERJ3GEYJ472 | 4.7K | | 1 |
| C51 | PQCUV1H562KB | 0.0056 | | 1 |
| C52 | ECUV1H104ZFV | 0.1 | S | 1 |
| C53 | ECUV1H151JCV | 150P | | 1 |
| C54 | ECUV1H104ZFV | 0.1 | S | 1 |
| C59 | ECUV1H560JCV | 56P | | 1 |
| C60 | PQCUV1H270JC | 27P | | 1 |
| C62 | ECUV1H103KBV | 0.01 | S | 1 |
| C63 | ECUV1H050CCV | 5P | | 1 |
| C64 | ECUV1H100DCV | 10P | S | 1 |
| C65 | ECUV1H103KBV | 0.01 | S | 1 |
| C66 | ECUV1H470JCV | 47P | | 1 |
| C67 | ECUV1H680JCV | 68P | | 1 |
| C69 | PQCUV1H105JC | 1 | S | 1 |
| C70 | ECUV1H270JCV | 27P | | 1 |
| C71 | ECUV1H180JCV | 18P | | 1 |
| C72 | ECUV1H104ZFV | 0.1 | S | 1 |

| Ref. No. | Part No. | Part Name & Description | | Pcs/Set |
|---|---|---|---|---|
| C73 | PQCUV1H180JC | 18P | S | 1 |
| C74 | ECEA1HKS4R7 | 4.7 | S | 1 |
| C75 | ECUV1H030CCV | 3P | | 1 |
| C76 | PQCUV1H681JC | 680P | | 1 |
| C77 | ECUV1H102KB | 0.001 | | 1 |
| C78 | ECUV1H103KBV | 0.01 | S | 1 |
| C80 | PQCUV1E104MD | 0.1 | S | 1 |
| C82 | ERJ3GEYJ153 | 15K | | 1 |
| C83 | ECUV1H102KBV | 0.001 | | 1 |
| C84 | ECUV1H151JCV | 150P | | 1 |
| C100 | ECUV1H220JCV | 22P | | 1 |
| C101 | ECUV1H220JCV | 22P | | 1 |
| C102 | ECUV1H104ZFV | 0.1 | S | 1 |
| C103 | ECUV1H104ZFV | 0.1 | S | 1 |
| C120 | ECEA1EU470 | 47 | S | 1 |
| C121 | PQCUV1H223KB | 0.022 | | 1 |
| C122 | PQCUV1H562KB | 0.0056 | | 1 |
| C123 | PQCUV1H223KB | 0.022 | | 1 |
| C124 | ECKD2H681KB | 680P | ⚠S | 1 |
| C125 | ECKD2H681KB | 680P | ⚠S | 1 |
| C126 | ECQE2224KF | 0.22 | ⚠ | 1 |
| C128 | ECEA1AU101 | 100 | | 1 |
| C129 | ECUV1H103KBV | 0.01 | S | 1 |
| C130 | ECEA0JU102 | 1000 | | 1 |
| C131 | PQCUV1C224ZF | 0.22 | | 1 |
| C132 | ECUV1H104ZFV | 0.1 | S | 1 |
| C133 | ECEA0JU102 | 1000 | | 1 |
| C134 | ECEA1AU101 | 100 | | 1 |
| C135 | ECEA1AU221 | 220 | | 1 |
| C136 | PQCUV1H103KB | 0.01 | S | 1 |
| C137 | ECUV1H103KBV | 0.01 | S | 1 |
| C138 | ECUV1H104MD | 0.1 | S | 1 |
| | | | | |
| L12 | ECUV1H104ZFV | 0.1 | S | 1 |
| J500 | ECUV1H103KBV | 0 | S | 1 |

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# REPLACEMENT PARTS LIST

## KX-T3908R-B

1. RTL (Retention Time Limited)

Note: The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

2. Important safety notice

Components identified by the ⚠ mark special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

3. The S mark indicates service standard parts and may differ from production parts.

4. RESISTORS & CAPACITORS

Unless otherwise specified.

All resistors are in ohms ( Ω ) K=1000Ω, M=1000KΩ

All capacitors are in MICRO FARADS ( μF ) P=μμF

*Type &Wattage of Resistor

Type

| | | |
|---|---|---|
| ERC:Solid | ERX:Metal Film | PQ4R:Carbon |
| ERD:Carbon | ERG:Metal Oxide | ERS:Fusible Resistor |
| PQRD:Carbon | ER0:Metal Film | ERF:Cement Resistor |

Wattage

| | | | | | |
|---|---|---|---|---|---|
| 10,16:1/8W | 14,25:1/4W | 12:1/2W | 1:1W | 2:2W | 3:3W |

*Type & Voltage of Capacitor

Type

| | |
|---|---|
| ECFD:Semi-Conductor | ECCD,ECKD,ECBT,PQCBC : Ceramic |
| ECQS:Styrol | ECQE,ECQV,ECQG : Polyester |
| PQCUV:Chip | ECEA,ECSZ : Electrolytic |
| ECQMS:Mica | ECQP : Polypropylene |

Voltage

| ECQ Type | ECQG ECQV Type | ECSZ Type | Others | |
|---|---|---|---|---|
| 1H: 50V | 05: 50V | 0F:3.15V | 0J :6.3V | 1V :35V |
| 2A:100V | 1:100V | 1A:10V | 1A :10V | 50,1H:50V |
| 2E:250V | 2:200V | 1V:35V | 1C :16V | 1J :63V |
| 2H:500V | | 0J:6.3V | 1E,25:25V | 2A :100V |

| Ref. No. | Part No. | Part Name & Description | Pcs/Set |
|---|---|---|---|
| | | CABINET AND ELECTRICAL PARTS | |
| 100 | PQKM10205W2 | FRONT CABINET | 1 |
| 101 | PQKF10146M2 | CABINET COVER | 1 |
| 102 | PQSA10041Y | ANTENNA | 1 |
| 103 | PQAX3P16Z | SPEAKER | 1 |
| 104 | PQSX10028U | BUTTON | 1 |
| 105 | PQKK10055Z2 | BATTERY COVER | 1 |
| 106 | PQJT10101Z | BATTERY TERMINAL | 1 |
| 107 | PQJT10102Z | BATTERY TERMINAL | 2 |
| 108 | PQXA36ASVC | RECHARGEABLE BATTERY | 1 |
| 109 | PQSX10029Z | COVER | 1 |
| 110 | PJHE5065Z | SCREW | 2 |
| 111 | XTW26+10E | SCREW | 2 |
| 112 | XTW26+12F | SCREW | 1 |

| Ref. No. | Part No. | Part Name & Description | | Pcs/Set |
|---|---|---|---|---|
| | | MAIN P.C.BOARD PARTS | | |
| PCB100 | PQWPT3908BR | MAIN, P.C.BOARD ASS'Y (RTL) | | 1 |
| | | (ICS) | | 1 |
| IC1 | AN6185FA | IC | | 1 |
| IC2 | AN6183SE1 | IC | | 1 |
| IC3 | PQVISC78184D | IC | | 1 |
| IC4 | PQVI0006G505 | IC | | 1 |
| | | (TRANSISTORS) | | |
| Q1 | 2SK543 | TRANSISTOR(SI) | | 1 |
| Q2 | 2SC2295 | TRANSISTOR(SI) | S | 1 |
| Q3 | 2SC2412K | TRANSISTOR(SI) | | 1 |
| Q4 | 2SC2295 | TRANSISTOR(SI) | S | 1 |
| Q5 | 2SD1819A | TRANSISTOR(SI) (or 2SC4155S) | | 1 |
| Q6 | 2SD1819A | TRANSISTOR(SI) (or 2SC4155S) | | 1 |
| Q15 | 2SD1819A | TRANSISTOR(SI) (or 2SC4155S) | | 1 |
| Q16 | 2SB709A | TRANSISTOR(SI) (or 2SA1162G) | S | 1 |
| Q17 | 2SB709A | TRANSISTOR(SI) (or 2SA1162G) | S | 1 |
| Q21 | 2SD1819A | TRANSISTOR(SI) (or 2SC4155S) | | 1 |
| Q101 | XN1116 | TRANSISTOR(SI) | | 1 |
| | | (DIODES) | | |
| D1 | MA840BTAKU | DIODE(SI) | | 1 |
| D3 | PQVD1SV145 | DIODE(SI) | | 1 |
| D15 | 1SS120 | DIODE(SI) | | 1 |
| D16 | MA700A | DIODE(SI) | | 1 |
| D17 | MA4068 | DIODE(SI) | | 1 |
| D18 | 1SS120 | DIODE(SI) | | 1 |
| D19 | MA110 | DIODE(SI) | | 1 |
| D20 | LNJ330GKGAC | LED | | 1 |
| D21 | LNJ230RKRAC | LED | | 1 |
| D24 | MA4068 | DIODE(SI) | | 1 |
| D34 | MA110 | DIODE(SI) | | 1 |
| | | (COILS AND TRANSFORMERS) | | |
| L2 | PQLQZM1R5K | COIL | | 1 |
| L3 | ELJFAR68M | COIL | | 1 |
| L4 | PQLQZM100K | COIL | | 1 |
| L10 | PQLQZM100K | COIL | | 1 |
| L11 | PQLQZM100K | COIL | | 1 |
| L12 | PQLQZM100K | COIL | | 1 |
| T1 | PQLA7A9 | COIL | | 1 |
| T2 | PQLI2B201 | I.F. TRANSFORMER | | 1 |
| T3 | PQL07A9 | COIL | | 1 |
| T11 | PQLA7A7 | COIL | | 1 |
| T13 | PQL07A8 | COIL | | 1 |
| | | (VARIABLE RESISTORS) | | |
| VR1 | EVNDXAA03B15 | VARIABLE RESISTOR | | 1 |
| VR2 | EVNDXAA03B35 | VARIABLE RESISTOR | | 1 |
| VR101 | EVNDXAA03B55 | VARIABLE RESISTOR | | 1 |
| VR102 | EVNDXAA03B54 | VARIABLE RESISTOR | | 1 |

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| Ref. No. | Part No. | Part Name & Description | | Pcs/Set |
|---|---|---|---|---|
| | | (CRYSTALS) | | |
| X1 | PQVCJ3992N9Z | CRYSTAL OSCILLATOR | | 1 |
| X2 | PQVCL3276N9Z | CRYSTAL OSCILLATOR | | 1 |
| X3 | PQVCJ10240C5 | CRYSTAL OSCILLATOR | | 1 |
| | | (CERAMIC FILTERS) | | |
| CF1 | RVFSFE107MSR | CERAMIC FILTER | S | 1 |
| CF2 | PQVFCFH455F1 | CERAMIC FILTER | | 1 |
| | | (OTHERS) | | |
| TC1 | ECRLA030E53 | TRIMMER CAPACITOR | | 1 |
| DUP1 | ELB4Z003S | COIL | S | 1 |
| CN1 | PQJP2D13Z | CONNECTOR | | 1 |
| E100 | PQEFBQM111G3 | BUZZER | | 1 |
| E101 | PQHR10269Z | MIC HOLDER | | 1 |
| E102 | PQJM124X | MICROPHONE | | 1 |
| E103 | PQNW1002Z | WASHER | | 1 |
| | | (RESISTORS) | | |
| R1 | ERJ3GEYJ331 | 330 | | 1 |
| R2 | ERJ3GEYJ220 | 22 | | 1 |
| R3 | ERJ3GEYJ393 | 39K | | 1 |
| R4 | ERJ3GEYJ470 | 47 | | 1 |
| R5 | ERJ3GEYJ470 | 47 | | 1 |
| R6 | ERJ3GEYJ154 | 150K | | 1 |
| R7 | ERJ3GEYJ220 | 22 | | 1 |
| R8 | ERJ3GEYJ220 | 22 | | 1 |
| R9 | ERJ3GEYJ681 | 680 | | 1 |
| R10 | ERJ3GEYJ223 | 22K | | 1 |
| R11 | ERJ3GEYJ223 | 22K | | 1 |
| R12 | ERJ3GEYJ562 | 5.6K | | 1 |
| R13 | ERJ3GEYJ273 | 27K | | 1 |
| R14 | ERJ3GEYJ823 | 82K | | 1 |
| R15 | ERJ3GEYJ104 | 100K | | 1 |
| R16 | ERJ3GEYJ224 | 220K | | 1 |
| R17 | ERJ3GEYJ104 | 100K | | 1 |
| R18 | ERJ3GEYJ223 | 22K | | 1 |
| R19 | ERJ3GEYJ152 | 1.5K | | 1 |
| R20 | ERJ3GEYJ333 | 33K | | 1 |
| R21 | ERJ3GEYJ103 | 10K | | 1 |
| R23 | ERJ3GEYJ561 | 560 | | 1 |
| R24 | ERJ3GEYJ273 | 27K | | 1 |
| R25 | ERJ3GEYJ393 | 39K | | 1 |
| R27 | ERJ3GEYJ124 | 120K | | 1 |
| R28 | ERJ3GEYJ683 | 68K | | 1 |
| R29 | ERJ3GEYJ223 | 22K | | 1 |
| R30 | ERJ3GEYJ103 | 10K | | 1 |
| R31 | ERJ3GEYJ152 | 1.5K | | 1 |
| R32 | ERJ3GEYJ823 | 82K | | 1 |
| R33 | ERJ3GEYJ103 | 10K | | 1 |
| R34 | ERJ3GEYJ104 | 100K | | 1 |
| R35 | ERJ3GEYJ393 | 39K | | 1 |
| R36 | ERJ3GEYJ222 | 2.2K | | 1 |
| R38 | ERJ3GEYJ103 | 10K | | 1 |
| R39 | ERJ3GEYJ564 | 560K | | 1 |
| R40 | ERJ3GEYJ274 | 270K | | 1 |
| R41 | ERJ3GEYJ103 | 10K | | 1 |
| R42 | ERJ3GEYJ393 | 39K | | 1 |
| R43 | ERJ3GEYJ103 | 10K | | 1 |
| R44 | ERJ3GEYJ683 | 68K | | 1 |
| R45 | ERJ3GEYJ103 | 10K | | 1 |
| R46 | ERJ3GEY0R00 | 0 | | 1 |
| R47 | ERJ3GEYJ104 | 100K | | 1 |
| R48 | ERJ3GEYJ103 | 10K | | 1 |
| R49 | ERJ3GEYJ104 | 100K | | 1 |
| R57 | ERJ3GEYJ334 | 330K | | 1 |
| R58 | ERJ3GEYJ104 | 100K | | 1 |
| R59 | ERJ3GEYJ334 | 330K | | 1 |
| R60 | ERJ3GEYJ122 | 1.2K | | 1 |
| R61 | ERJ3GEYJ334 | 330K | | 1 |
| R67 | ERJ3GEYJ332 | 3.3K | | 1 |
| R68 | ERJ3GEYJ332 | 3.3K | | 1 |
| R74 | ERJ3GEYJ104 | 100K | | 1 |
| R76 | ERJ3GEYJ563 | 56K | | 1 |
| R79 | ERJ3GEYJ103 | 10K | | 1 |
| R81 | ERJ3GEYJ562 | 5.6K | | 1 |
| R82 | ERJ3GEYJ392 | 3.9K | | 1 |
| R83 | ERJ3GEYJ104 | 100K | | 1 |
| R84 | ERJ3GEYJ271 | 270 | | 1 |
| R85 | ERJ3GEYJ120 | 12 | | 1 |
| R89 | ERJ3GEYJ103 | 10K | | 1 |
| R91 | ERJ3GEYJ472 | 4.7K | | 1 |
| R93 | ERJ3GEYJ681 | 680 | | 1 |
| R94 | ERJ3GEYJ681 | 680 | | 1 |
| R100 | ERJ3GEYJ472 | 4.7K | | 1 |
| R101 | ERJ3GEYJ472 | 4.7K | | 1 |
| R102 | ERJ3GEYJ104 | 100K | | 1 |
| R103 | ERJ3GEYJ104 | 100K | | 1 |
| R104 | ERJ3GEYJ472 | 4.7K | | 1 |
| R105 | ERJ3GEYJ683 | 68K | | 1 |
| R111 | ERJ3GEYJ222 | 2.2K | | 1 |
| R200 | ERJ3GEYJ394 | 390K | | 1 |
| R201 | ERJ3GEYJ224 | 220K | | 1 |
| J2 | ERJ3GEY0R00 | 0 | | 1 |
| | | (CAPACITORS) | | |
| C1 | ECUV1H103KBV | 0.01 | S | 1 |
| C2 | ECUV1H104ZFV | 0.1 | S | 1 |
| C3 | ECUV1H180JCV | 18P | | 1 |
| C4 | ECUV1H103KBV | 0.01 | S | 1 |
| C5 | ECUV1H121JCV | 120P | | 1 |
| C6 | ECUV1H220JCV | 22P | | 1 |
| C7 | ECUV1H103KBV | 0.01 | S | 1 |
| C8 | ECUV1H103KBV | 0.01 | S | 1 |
| C9 | ECUV1H100DCV | 10P | | 1 |
| C10 | ECUV1H220JCV | 22P | | 1 |
| C11 | ECUV1H103KBV | 0.01 | S | 1 |
| C12 | ECUV1H470JCV | 47P | | 1 |
| C13 | ECUV1H680JCV | 68P | | 1 |
| C14 | PQCUV1H330JC | 33P | S | 1 |
| C15 | ECUV1H150JCV | 15P | | 1 |
| C16 | PQCUV1H180JC | 18P | S | 1 |
| C17 | ECUV1H030CCV | 3P | | 1 |
| C18 | ECUV1H102KBV | 0.001 | | 1 |
| C19 | ECUV1H223KBV | 0.022 | S | 1 |
| C20 | ECUV1H223KBV | 0.022 | S | 1 |
| C21 | ECEA1AKS330 | 33 | S | 1 |
| C25 | ECUV1H150JCV | 15P | | 1 |
| C26 | ECUV1C104KBV | 0.1 | | 1 |
| C27 | ECEA1CKS100 | 10 | | 1 |
| C30 | ECUV1H104ZFV | 0.1 | S | 1 |
| C31 | ECEA1CKS100 | 10 | | 1 |
| C32 | ECEA1HKS2R2 | 2.2 | | 1 |
| C33 | ECUV1C473KBV | 0.047 | | 1 |
| C36 | ECEA1CKS100 | 10 | | 1 |
| C37 | ECUV1H473MDV | 0.047 | S | 1 |
| C38 | ECUV1H103KBV | 0.01 | | 1 |
| C39 | ECUV1H103KBV | 0.01 | | 1 |
| C40 | ECUV1H472KBV | 0.0047 | | 1 |
| C41 | PQCUV1H105JC | 1 | S | 1 |

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| Ref. No. | Part No. | Part Name & Description | | Pcs/Set |
|---|---|---|---|---|
| C42 | ECUV1H103KBV | 0.01 | | 1 |
| C43 | ECUV1H390JCV | 39P | | 1 |
| C44 | ECUV1H222KBV | 0.0022 | | 1 |
| C45 | ECEA1CKS100 | 10 | | 1 |
| C46 | PQCUV1E104MD | 0.1 | S | 1 |
| C47 | PQCUV1C474ZF | 0.47 | | 1 |
| C48 | PQCUV1E104MD | 0.1 | S | 1 |
| C49 | ECUV1H392KBV | 0.0039 | | 1 |
| C52 | ECEA0JKS470 | 47 | | 1 |
| C55 | ECUV1H103KBV | 0.01 | S | 1 |
| C56 | ECUV1H102KBV | 0.001 | | 1 |
| C57 | ECEA0JKS470 | 47 | | 1 |
| C58 | ECUV1H103KBV | 0.01 | S | 1 |
| C59 | ECUV1H103KBV | 0.01 | S | 1 |
| C60 | ECUV1H104ZFV | 0.1 | S | 1 |
| C61 | ECEA0JKS470 | 47 | | 1 |
| C62 | ECUV1H104ZFV | 0.1 | S | 1 |
| C64 | PQCUV1H105JC | 1 | S | 1 |
| C65 | ECUV1H104ZFV | 0.1 | S | 1 |
| C66 | PQCUV1E104MD | 0.1 | S | 1 |
| C70 | ECUV1H104ZFV | 0.1 | S | 1 |
| C71 | ECUV1H220JCV | 22P | | 1 |
| C72 | ECUV1H220JCV | 22P | | 1 |
| C73 | ECUV1H270JCV | 27P | | 1 |
| C74 | ECUV1H270JCV | 27P | | 1 |
| C75 | ECUV1H103KBV | 0.01 | S | 1 |
| C76 | ECUV1H104ZFV | 0.1 | S | 1 |
| C80 | ECEA0GKS221 | 220 | | 1 |
| C81 | ECUV1H104ZFV | 0.1 | S | 1 |
| C84 | ECUV1H103KBV | 0.01 | S | 1 |
| C85 | ECUV1H103KBV | 0.01 | S | 1 |
| C90 | ECUV1H103KBV | 0.01 | S | 1 |
| C91 | ECUV1H103KBV | 0.01 | S | 1 |
| C95 | ECUV1H103KBV | 0.01 | S | 1 |
| C200 | ECUV1H104ZFV | 0.1 | S | 1 |
| C201 | ECUV1H101JCV | 100P | | 1 |

| Ref. No. | Part No. | Part Name & Description | Pcs/Set |
|---|---|---|---|
| SUB P.C.BOARD PARTS | | | |
| PCB101 | PQWP2T3908BR | SUB, P.C.BOARD ASS'Y (RTL) | 1 |
| Q114 | PQVIN7201U30 | TRANSISTOR (SI) | 1 |
| D100 | MA700A | DIODE(SI) | 1 |

**KX-T3908-B**

| Ref. No. | Part No. | Part Name & Description | Pcs/Set |
|---|---|---|---|
| ACCESSORIES AND PACKING MATERIALS | | | |
| A1 | PQJA59V | TEL CORD (LONG) | 1 |
| A2 | PQJA59X | TEL CORD (SHORT) | 1 |
| A3 | PQQX11448Z | INSTRUCTION BOOK | 1 |
| A4 | KX-A10 | AC ADAPTOR ⚠ | 1 |
| A5 | PQQT11156Z | TEL CORD LABEL | 1 |
| P1 | PQPP10072Z | PROTECTION COVER | 1 |
| P2 | PQPH89Y | PROTECTION COVER | 1 |
| P3 | PQPN10496Z | CUSHION | 1 |
| P4 | PQPK11800Z | GIFT BOX | 1 |